

NYZS The WILDLIFE CONSERVATION SOCIETY  
Annual Report 1991-1992



Wildlife





Wildlife





OVER THE PAST several years, the Society's trustees and staff have been involved in the complex task of redefining this institution's identity and mission. What we do can be put simply: we save wildlife. How we do so is somewhat more complicated. We protect, we propagate, we explain and discover new facts, we advise, we advocate, we teach, we inspire.

The purpose of our deliberations was, and is, to focus these activities in order to achieve a new effectiveness on behalf of both wildlife and humankind. We are responding to the advance of a global environmental crisis that requires both immediate action and thoughtful, long-term solutions.

So here we are, in our 97th year, with a new naming system that we think reflects, more accurately than our old names, the real substance and coherence of our work, in all its guises. We are, and have been for some time, an international wildlife conservation organization with a broad impact on conservation policies,

science, and strategies around the world. Our wildlife conservation parks and centers in New York and Georgia pursue corresponding goals, through scientific study, breeding programs for vanishing species, and environmental education. The words "wildlife conservation" say what we do and aspire to do.

This Annual Report begins a new era of integrated action for wildlife. Our transformation continues, however, along with our ability to devise solutions and to involve and enlist others in our mission.

HOWARD PHIPPS, JR., PRESIDENT, and  
WILLIAM CONWAY, GENERAL DIRECTOR

A large group of beluga whales are seen swimming in dark, choppy water. The whales are silvery and sleek, with their bodies curving as they move. They are densely packed in some areas, particularly in the upper right, and more spread out in others. The water is a deep, dark blue-black, and the overall scene is captured from an aerial or high-angle perspective.

**T**he City of New York, through its Department of Cultural Affairs, provides part of the annual operating support for the International Wildlife Conservation Park and the New York Aquarium for Wildlife Conservation, both of which occupy City-owned buildings on City-owned property. The City's Department of Parks and Recreation provides partial funding for the Central Park and Queens Wildlife Conservation Centers.

The Society also receives funds annually from the Natural Heritage Trust, a program of the New York State Office of Parks and Recreation.

*Kathi and one of two Beluga calves born at the Aquarium.  
Belugas gather in the Arctic waters of Canada.*



To Sustain Biological Diversity

To Teach Ecology

To Inspire Care



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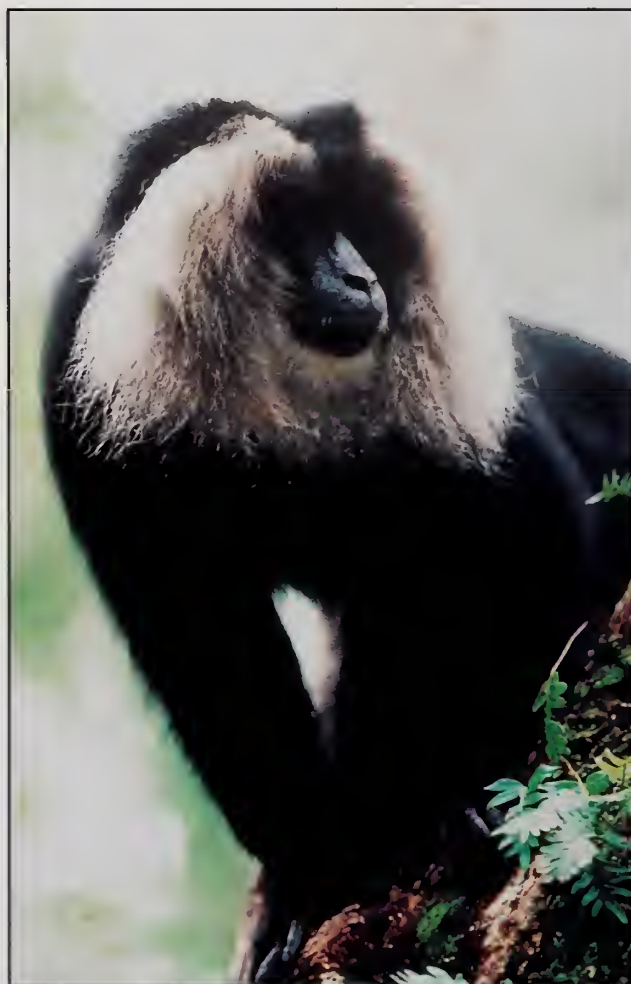
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*Lion-tailed macaque at the St. Catherines Wildlife Conservation Center.*



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(at June 30, 1992)

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Free-ranging ring-tailed lemurs at St. Catherines Wildlife Conservation Center.





## Report of the President

"If we want things to stay as they are, things will have to change," wrote the Italian novelist Giuseppe di Lampedusa. The paradox applies vividly to conservation: if we want to preserve our natural heritage, things will have to change. In a like manner, G.K. Chesterton, another master of paradox, once remarked that making something holy often was simply a matter of turning a conventional idea on its head. Too often, to promote a hands-off conservation approach, we turn upside down the idea that human actions only change the fragile fabric of life on Earth for the worse. Since the Society's founding in 1895, it has promoted constructive action leading to beneficial changes as the core of its mission.

In the early days we led in regenerating the American bison, reporting the precipitous decline of Pacific fur seals, and drafting legislation to govern trade in migratory bird plumage. Today, we use our unparalleled resources in conservation field science, environmental education, wildlife management, wildlife medicine, and interpretive design effectively in New York and around the world. And while we promote parks and refuges, we increasingly emphasize conservation outside parks as well.

The Society is making changes toward greater unity and integration. We are changing our organiza-

tional structure and taking many steps, including a reformulation of our historic name to better reflect our strategic mission: To be acknowledged as the world's most effective leader in saving wildlife and natural habitats and inspiring others to understand and care for our wildlife heritage.

Likewise, our newly launched National Wildlife Crisis Campaign, announced at our 1992 annual meeting, reflects the urgency of our mission. More than \$60 million in public and private funds have been raised toward our \$100-million goal, all of which is pledged directly to saving wildlife. The BGM Fund, Cleveland H. Dodge Foundation, Inc., The Heckscher Foundation for Children, the Robert Wood Johnson Jr. Charitable Trust, and The Starr Foundation all provided generous leadership support for the Campaign this year.

Essential to our worldwide program, especially in the areas of education, scientific study, and the propagation of vanishing species are the Society's wildlife sanctuaries in the Bronx, Brooklyn, Manhattan, and Queens, which were visited by 3,254,417 people last year. Society membership grew by 20 percent to a record enrollment of 44,875, and membership in our international field division increased to 47,000, a jump of 19 percent from the previous year. Overall, generous individuals, foundations, and corporations gave a total of \$12,548,301 in gifts, dues, and bequests.

Private support has become vital in light of stagnant public funding. New York City support of the International Wildlife Conservation Park and New York Aquarium for Wildlife Conservation totaled \$8,716,476. State support through the Natural Heritage Trust and the New York State Council of the Arts came to \$1,814,527. And Department of Parks and Recreation funding for the Central Park and Queens Wildlife Conservation Centers was \$3,523,471. Federal support for ongoing Society programs here and abroad, including grants from the



*President Phipps helps celebrate Mrs. Vincent Astor's 90th birthday.*

U.S. Agency for International Development (USAID), the Institute for Museum Services, and the U.S. Department of Education's National Diffusion Network, totaled \$1,818,598. The Society's international programs have also earned support of the development agencies like the World Bank.

Several crucial programs received significant support from generous private donors. The Edward John Noble Foundation renewed its funding for the our St. Catherines Wildlife Conservation Center in Georgia with a major gift of \$394,000. The Liz Claiborne Art Ortenberg Foundation gave \$412,000 for field projects in South America, Africa, and Asia. The Robert Wood Johnson Jr. Charitable Trust gave \$250,000 in support of the Ituri Forest Project in Zaire and the Keith Wold Johnson Foundation supported pioneering conservation efforts in Tiber's newly created Chang Tang Wildlife Reserve with a gift of \$100,000.

The dedicated efforts of our volunteer leadership provided pivotal support to several Society programs this year. The Business Committee, led by chairman Eugene R. McGrath, raised more than \$300,000 for education and field programs at the annual Corporate Benefit on June 17, 1992 at Central Park Wildlife Conservation Center. And our international big cat programs received more than \$20,000 from the Conservation Council's annual benefit on June 18, also at the Central Park Center.

Several dedicated men and women have joined our volunteer leadership. New trustees include James Dowling, chairman of Burson Marsteller, who has been so helpful in providing public relations support for the Society; Bradley Goldberg, an invaluable Conservation Committee member and formerly on the Board of Advisors; Mrs. Allison Stern, another former advisor who has been active in the Society's conservation programs and has served as a docent in the Central Park Zoo; Dr. Judith Sulzberger, a committed supporter of our national education and international field vet programs; and Stephen Friedman of Goldman, Sachs & Co. Trustee Richard A. Voell was appointed to the Board's Executive Committee, and

Richard D. Parsons, a member since 1987, has left the Board.

We also sadly record the passing of dedicated Trustee Mrs. L. Emery Katzenbach. Shirley was a devoted supporter of the Wildlife Sciences Program and an unwavering friend of the Society. We shall miss her greatly.

In recognition of her 23 years of generous commitment and service, Mrs. Vincent Astor was asked to serve as a Life Trustee. Peter C.R. Huang joined the Board of Advisors after 11 years as a trustee. Also newly elected as advisors were Martha L. Byorum, active on the Business Committee; Eugene R. McGrath, chairman of the Business Committee, F. Skiddy von Stade III, former co-chairman of the Conservation Council, and Mrs. Charles L. Wilson III, current co-chairman of the council.

Howard Phipps, Jr.  
President



## Report of the General Director

### Changing Our Names.

The New York Zoological Society operates one of the world's most cohesive and effective programs of wildlife conservation, science, and education—under an extraordinary babble of aliases. Individually, we rather like our institutional names and nicknames, but we are embarrassed by their lack of coherence and connection.

The names we bestow upon ourselves, or which the media accord us, range from “Zoo Sock” and “Wildlife Conservation International” to just plain “Zoo” for the Society as a corporation. They include “Coney Island Aquarium,” for the New York Aquarium; “Wicky,” for our Wildlife Conservation International division; and, best known by far, “Bronx Zoo,” for the New York Zoological Park. With the addition of the Wildlife Survival Center in Georgia eighteen years ago, the Central Park Zoo four years ago, the Queens Zoo this year, and the Prospect Park Zoo next year the number of our institutional sites—and names—has doubled. Our international division has experienced unparalleled growth and now includes 158 projects in 41 nations under the WCI name. Our magazine, *Wildlife Conservation*, continues to expand its readership throughout the country and overseas.

Few visitors to our zoos and aquarium have any idea of the connections among them. Fewer still are aware of the Society's international wildlife conservation programs, its extensive scientific research, or its

environmental education programs, now being used by school systems in 31 states and several foreign countries. Many of our hometown public officials, we have discovered to our consternation, have little idea that the Zoological Society's citywide services (not to mention its national and international programs) are the efforts of a single organization.

This identity problem has caused governmental authorities or agencies to consider our requests on the basis of their familiarity, or lack of familiarity, with but one of our units. Individual donors and foundations sometimes overlook us for the same reason. The national media may report a great conservation coup by one of the Society's divisions, WCI, as the July 13 *TIME* magazine did in its cover story on the Congo's major new wildlife reserve, without acknowledging the NYZS connection. On top of all this, “zoo” has become a dubious generic term for everything from baseball teams to chaos, mostly the latter.

“Zoo” also conveys a picture of the menageries of yesteryear, not of the wild animal expositions and breeding centers of today. It gives no idea of the Society's far-flung educational, scientific, and conservation programs devoted to saving nature around the world. But, alas, it is a great word, short, strong, and difficult to replace.

Months of study did not find a wholly satisfactory new corporate title for the Zoological Society, one that would effect the needed linkage between our various divisions, convey the significance of our international conservation mission—and be short. Nor have we found succinct institutional names that will do all these things, but we are making a start anyway.

The New York Zoological Society, taken altogether with its extensive research in conservation science, its propagation of vanishing species, its direct programs of ecosystem preservation around the developing world, and its environmental education programs, is, most simply and deeply, a wildlife conservation society. We have decided to call ourselves that: **NYZS The Wildlife Conservation Society.**

Some experimental title changes have been incorporated in this *Annual Report*. By spring, many more will be evident at the institutions. They will seek to make everyone aware, whether reading a report of one of our overseas conservation programs or visiting one of our wildlife sanctuaries, of a unified, intensely targeted organization working to save nature. Linked





names have been proposed for each of the institutions, and the effort is underway to deal with cumbersome geographic descriptors and entrenched nicknames.

At the turn of the century, one of my predecessors, William T. Hornaday, railed against newspapers so careless as to refer to the "New York Zoo" or the "Zoo Society." He insisted on "Zoological" and "Park" and wrote letters to that effect to all *sixteen* daily newspapers in the City pointing out that the application of the nickname "Bronx Zoo" to the New York Zoological Park was "undignified, offensive to the Zoological Society and injurious to the Park." He failed to note that it was also shorter.

In reply, the *Press* published a poem:

My name is William Hornaday—  
A trifle pedagogical.  
DIRECTOR I! With all to say!  
My Park is Zoological.

By heaven! Should you dare to say  
"The New York Zoo Society,"  
There'd be a little hell to pay  
Anent your contrariety!

As the Society seeks to make its names match its mission, we look forward to lively times. And we are keeping "Bronx Zoo" handy.

### Sharper, Deeper Focus.

During the past year, every Society department focused on finding ways, whether they involve conducting research, selling sandwiches, or training field scientists, to intensify our efforts on behalf of wildlife conservation. The process has been both spurred on and held back by the serious reductions in municipal support reported last year. This year, some restitution was granted, and many economies were effected. Encouragingly, institutional membership made large gains and attendance began to rise, while our conservation work won major new support overseas.

### Extraordinary Projects Saving Nature Overseas.

The Society's increasingly successful effort in fostering creation of the vast Chang Tang Reserve on the cold Tibetan Plateau, was followed, after nearly fifteen years of work in Zaire, by the official designation of the Okapi Wildlife Reserve, Training, and Monitoring Center in the warm Ituri Forest. It is the first new pro-

tected area in Zaire in 22 years.

In this hemisphere, the Society's joint "Paseo Pantera" program with the Caribbean Conservation Corporation is now linking conservation areas all along the Central American isthmus and creating protected corridors between them. In Brazil, international support is making possible our remarkable new Mamirauá project to protect and manage the largest tract of flooded forest in all Amazonia. And back in Africa, we are overseeing a protection and management program for the huge new Nouabalé-Ndoki reserve in Congo, with its unmatched populations of forest elephants and gorillas.

### The New Queens Zoo.

A leap from Amazonia to the Borough of Queens is all in a day's work for the Society, but even we were surprised by the enthusiasm with which the City arranged operations support for the newly remodeled Queens Wildlife Conservation Center—and apprehensive about future support. On June 25, the renewed institution opened under Society management. Its series of handsomely interrelated habitats are dedicated to the wildlife of North America, and they are beautiful!

The Society's diversified scientific staff is unequalled by any other conservation organization. It combines intrepid field scientists, innovative educators, experts in wildlife medicine, designers, writers, curators, nutritionists, and specialists in many other areas. We can serve a meal fit for a hummingbird or for an elephant, advise a Chilean phoenicopterologist or a Westchester schoolteacher, or involve an African forester or Central American coastal developer in the job of preserving habitats. The result of this exceptional diversity and outreach is practical conservation and environmental education that works, the propagation of endangered species, the training and support of overseas indigenous scientists and conservationists, and the protection, each year, of a few more of Earth's wild lands for the future.


And the result is also improvement in the quality of life in the great city where NYZS The Wildlife Conservation Society makes its headquarters and provides even the most alienated citydweller a chance to touch nature.

William Conway  
General Director



*Kathi and baby Beluga born at the Aquarium on August 14, 1991.*

# Sanctuaries for Wildlife

ow vanishing species are protected, propagated, and cared for at the Society's international wildlife centers in New York and Georgia. Reports on wildlife management, science, and exhibition reflect the increasing involvement, during the year, of Society curators, supervisors, keepers, exhibit designers, veterinarians, geneticists, and animal management experts in conservation initiatives around the world.

## **International Wildlife Conservation Park ("Bronx Zoo")**

### **Mammals**

#### *Saving Gorillas and Other Collaborations.*

At the end of 1991, the department was responsible for 1,782 animals of 138 species, nearly one-third of them endangered. More than ever, the scope of care involved leadership and participation in crucial national and international programs to save species.

The Park's successful breeding group of lowland gorillas was joined in November by Timmy, an unproven 33-year-old silverback male from the Cleveland Zoo. The transfer was part of a Species Survival Plan (SSP), under the American Association of Zoological Parks and Aquariums (AAZPA), to help ensure the social compatibility, genetic diversity, and survival of collection gorillas. This is one of 21 SSPs in which the department is involved.

Timmy became the focus of local and national press attention when a misguided group sought to prevent his transfer. After several months of quiet adjustment to his new home and companions, he began to take an interest in female members of the group. By late May he had mated with 20-year-old Partycake.

Meanwhile, the Mammal staff began to work with the Exhibition and Graphic Arts, Education, and Public Affairs departments on plans for Project Gorilla, which will link a dramatic new interpretive forest environment for gorillas and other species at the Park with efforts by our international division's scientists to save these species and their habitat in Africa.

The new facility, replacing the outmoded Great Apes House, will be a five-acre breeding, education, and fund-raising center in the Park's southwest corner.

The difficult process of establishing an international breeding program for the extremely rare Sumatran rhino at four American zoos, including the International Wildlife Conservation Park, continued under the aegis of the Sumatran Rhino Trust and an SSP co-chaired by General Curator James Doherty. Doherty led a management meeting at the Sumatran Rhino Workshop in Indonesia and hosted a breeding colloquium for zoo biologists in the Bronx. Meanwhile, Collections Manager Penny Kalk and Veterinarian Paul Calle brought two rescued rhinos from Sumatra to North America for the trust's breeding program.

An SSP team, including Supervisor Mike Tiren and Veterinarian Bonnie Raphael, traveled to the wildlife reserve at Askania Nova in the Ukraine, where they helped handle, mark, and collect blood and tissue samples from the herd of 100 Przewalski's horses. Testing from the samples will provide a true genetic profile of the animals and aid in planning the worldwide breeding program for this species, which survives now only in zoos and reserves.

Another genetic profile was created for the gaur, an endangered wild Asian cattle species. At the request of the gaur SSP, Curatorial Intern Patrick Thomas and Field Veterinarian William Karesh used a biopsy dart invented by Dr. Karesh to collect tissue samples from the Park's herd of 14 animals, part of the total SSP population of 155 animals in 12 zoos.

A special field project, directed by Curator





*Grevy's zebra foal and mother.*

Fred Koontz, Dr. Robert Horwich of Howlers' Forever, and Ernesto Saqui of the Belize Audubon Society, reached a crucial stage. In May, three groups of black howler monkeys were transferred from a healthy population in northern Belize to Cockscomb Basin Wildlife Sanctuary in southern Belize, where the monkeys had been hunted to extinction but will now be protected. Assisted by Dr. Ken Glander of Duke University, former mammal keeper and instructor Scott Silver, and Veterinarian Wendy Westrom, the team captured, transported, and released fourteen howlers into the 100,000-acre reserve. All the animals were outfitted with radio-tracking transmitters, so that Warden Lindo Saqui and Park Director Ernesto Saqui can study their movements and physical condition as they adjust to their new home. According to the latest reports, the monkeys are doing well. Additional animals will probably be translocated in the coming year.

Under the Biotelemetry Studies Unit, directed by Dr. Koontz, Dr. Karesh, and Chief Veterinarian Bob Cook, two elephants, in Zaire and Cameroon, have now been successfully outfitted with radio-tracking transmitters. When it has been refined, this satellite-based system will help field scientists James Powell and Richard Barnes determine the ecological and territorial needs of forest elephant populations.

Another space-age aid in global conservation

was the focus of hearings of the National Space Council in Washington, D.C., where Dr. Koontz testified on the importance of the Landsat (Satellite) Earth Observation Program for studying the relative health and degradation of ecosystems. The hope is to make this resource more readily available to non-profit conservation organizations than it has been during the past three administrations.

In December, General Curator James Doherty delivered the commencement address at California Polytechnic State University in San Luis Obispo.

## Birds

### *Bucking the Trade.*

With the Society playing a key role, significant progress was made on several fronts in halting the worldwide trade in wild birds. On behalf of seventeen organizations, Ornithology Chairman Donald Bruning testified in June before the House Committee on Merchant Marine and Fisheries in support of the Wild Bird Conservation Act of 1992. Dr. Bruning, whose work has been crucial to establishing bird trade laws in New York and New Jersey, was instrumental in drafting language for the Federal bill. It is hoped that by the end of the year national legislation will exist banning the commercial importation of all bird species listed on CITES (the Convention on International Trade in Endangered Species), unless a sustainable management program has been proven.

Earlier, representing the Society and chairing the American Association of Zoological Parks and Aquariums (AAZPA) delegation at the March CITES convention in Kyoto, Japan, Dr. Bruning and others lobbied for international restrictions on the bird trade as well as working on many other trade issues important to the Society and AAZPA. They were successful in passing a broad measure to strengthen the qualifications for trading birds on the CITES II list.

Dr. Bruning also helped at the CITES meeting to attain increased protection for highly threatened groups, such as hornbills, all species of which were placed on CITES I and II. In September, Asian hornbills were the subject of a workshop in Singapore organized and run by Curator Christine Sheppard, who serves as secretary of the IUCN/International Council for Bird Preservation's (ICBP) Hornbill Specialist Group. Delegates from more than a dozen

Asian countries drafted a plan of conservation priorities and action strategies for these species.

Planning a broad new conservation program for colonial waterbirds was begun under the direction of Dr. Sheppard and Assistant Curator Annarie Lyles. Most species of stork, ibis, egret, and spoonbill are in trouble throughout the world, threatened by wetlands destruction and other human activities.

The Bird Department will launch the first comprehensive effort to save these spectacular creatures through coordinated field studies, captive propagation, public education, and nutritional, behavioral, and genetic research. Starting with existing facilities, the program will culminate in the development of a spectacular series of wetlands breeding environments stretching from the Aquatic Birds building to Cope Lake.

The project began with a series of in-house seminars. Curators, supervisors, and keepers discussed strategies and objectives for each of the colonial species now in the collection. Meetings with Society field scientists helped identify species for which collaboration with field studies would be possible. Susan Elbin, a doctoral candidate at Rutgers University, was selected to coordinate behavioral studies, develop methodologies, and train observers. A core group of Friends of the Zoo volunteers has already observed the Park's scarlet ibis colony for six months. Preliminary work began for boatbilled herons, cormorants, and Inca terns. Sheppard, Lyles, and Elbin organized a workshop on the management of colonial species for the April meeting of the AAZPA bird curators group in Dallas.

Phase I of the World of Birds renovation neared completion in the first major overhaul of this innovative facility since it opened in 1972. Three major exhibits have been dramatically rededicated to themes stressing pressures on bird populations and efforts to combat them. Redesigned with huge artificial trees, meandering streams, lush plantings, and backdrop landscape murals, the forest landscapes seems to stretch from the viewer's

space into distant mountains, showing the effects of deforestation and forest fragmentation and how parks protect avian life.

Breeding highlights of the year included the first egg laid by a red bird of paradise that itself was bred and hatched at the Park. Early in 1992, our first Rothschild mountain peacock pheasant hatched, representing the second pair of this species to breed in North America. Dr. Bruning manages an international consortium and studbook for the species, which is part of a comprehensive program for pheasants that includes activities in Malaysia as well as Park-based propagation. An overall strategy for the program was begun during the year.

Dr. Bruning was elected chair of the AAZPA ethics board and helped develop a first-draft conservation and management plan for parrots at a January meeting in Cambridge, England, sponsored by the IUCN/ICBP and Captive Breeding Specialist Group (CBSG). Dr. Sheppard now chairs the AAZPA committee working with propagation program planning. Department staff now chairs four AAZPA Taxon



Senior Keeper Joy Gonzalez feeding bird of paradise chick.



Advisory Groups and two Species Survival Plans, and keeps four International Studbooks and three North American Regional Studbooks.

### Amphibians and Reptiles

#### *New York to Venezuela and Back.*

Society herpetologists, like their counterparts in mammalogy and ornithology, led and participated in a growing number of conservation efforts in the field. Funded by a New York State Return a Gift to Wildlife grant, Curator John Behler joined American Museum of Natural History turtle specialist Michael Klemens and Bard College ecologist Erik Kiviat in surveying the remaining habitat of the endangered bog turtle in southeastern New York. Prospects for this species do not appear promising in the northeastern United States, although eight new populations were discovered during the survey. As a byproduct of this study, a habitat matrix is being devised to aid wetland experts

in assessing the potential for bog turtle habitation in areas proposed for development.

The department also sponsored a successful petition to add the bog turtle to Appendix I (the most rigorously protected from commercial trade) of the Convention on International Trade in Endangered Species (CITES). As chairman of the World Conservation Union's Tortoise and Freshwater Turtle Specialist Group, the curator assisted in the implementation of the group's worldwide turtle action plan, under which more than 30 research projects have already been started. On the customs front, help was provided during the year to international wildlife officers who intercepted large groups of protected turtles bound for the shops of wildlife dealers.

In Venezuela, Reptile Superintendent William Holmstrom joined Veterinarian Paul Calle and the International Division's John Thorbjarnarson to begin a multiyear radiotelemetry study of the anaconda, the world's largest snake. In the first phase of the study, some 100 anacondas were captured, weighed, measured, and medically evaluated. This information will be important to evaluating the performance of the species in captivity. A dozen of the



*Howler monkey translocation team in Belize.*

### Curators Abroad.

Society curators, supervisors, and keepers are increasingly called upon to conduct or assist in wildlife reclamation, management, and research projects around the world. Here are a few examples from last year:

- Sumatran rhino rescued in Indonesia by Mammal Collections Manager Penny Kalk and Veterinarian Paul Calle for cooperative interzoo breeding program.
- Blood collected for genetic profiling of 100 Przewalski's horses at Askania Nova, Ukraine, by Mammal Supervisor Mike Tiren and Veterinarian Bonnie Raphael.
- Fourteen black howler monkeys translocated from northern to southern Belize by Mammal Curator Fred Koontz and team.
- Forest elephants radio-collared in Cameroon and Zaire for satellite tracking by Biotelemetry Studies Unit directed by Fred Koontz, International Field Veterinarian William Karesh, and Chief Veterinarian Bob Cook.
- Restrictions on international bird trade advocated by Ornithology Chairman Donald Bruning at CITES meeting in Kyoto.
- Workshop on Asian hornbills organized and run by Ornithology Curator Christine Sheppard in Singapore.
- Anacondas fitted with radio transmitters in Venezuela by Herpetology Superintendent William Holmstrom and Veterinarian Paul Calle for long-term study by field biologist John Thorbjarnarson.

*Rounding up anacondas in Venezuela.*





animals were fitted with radio transmitters. This will allow Thorbjarnarson and his students to monitor seasonal movements, changing health status, breeding biology, growth rates, and temperature regulating behavior.

Back in New York, the department continued to work closely with the National Park Service in their efforts to develop and restore reptile and amphibian habitat at Gateway National Recreation Area on Long Island. Hognose snakes and box turtles released earlier appear to be reproducing successfully. Spotted turtles are now being bred and raised at the Park for eventual release.

Renovated and reopened last year, the World of Reptiles has been a spectacular success with visitors. In the new exhibits, the Madagascan Parson's chameleons settled down to display their dramatic color changes, the Malaysian false gharials grew, with the male, at 14 feet, becoming one of the largest crocodilians on display anywhere, and the alligator snapping turtle approached 30 inches in length and 175 pounds. The nursery was kept busy with hatchlings of many species, including Surinam dwarf caimans, Chinese alligators, Dumeril's ground boas,

giant Amazon and red-headed Amazon sideneck turtles, Australian giant snakes, and spotted turtles. Azure blue-and-green and black dart poison frogs were cultured by keepers in the amphibian room.

Curator Behler and Superintendent Holmstrom continued to serve as species coordinators and studbook keepers for the Chinese alligator and Madagascan radiated tortoise, respectively. Behler was coordinator of the AAZPA Crocodilian Advisor Group, a member of the World Conservation Union's Captive Breeding Specialist Group. He was also appointed Associate in Herpetology of the American Museum of Natural History. As administrator of the Nixon Griffis Fund for Zoological Research he has presided over the award of 85 grants totaling more than \$225,000 since the fund's inception in 1985.

#### St. Catherines Wildlife Conservation Center *Slow to Mate.*

Over the years the Center has evolved a particular focus on the severely endangered wildlife of Madagascar (Malagasy Republic), a much larger sister island to St. Catherines off the coast of Africa. The relationship has included international conservation

*Herpetology Superintendent Bill Holmstrom tracking anacondas in Venezuela.*



## Keeping Book.

Breeding endangered species is one of the major jobs of wildlife sanctuaries around the country. The Society participates in 39 of the 65 Species Survival Plans (SSPs) administered by the American Association of Zoological Parks and Aquariums (AAZPA). Eight SSPs are coordinated by Society curators, supervisors, or keepers:



*Radiated tortoise.*

- Chinese alligator—John Behler
- Radiated tortoise—William Holmstrom
- St. Vincent's parrot—Donald Bruning
- Cranes—Christine Sheppard
- Mauritius pink pigeon—Kurt Hundgen
- Snow leopard—Danny Wharton
- Sumatran rhino—James Doherty
- Malayan tapir—James Doherty



*Malayan  
peacock  
pheasant*

Society staff also keeps international studbooks for the Chinese alligator (Behler), the radiated tortoise (Holmstrom), the white-naped crane (Sheppard), the Malayan peacock pheasant (Bruning), and the mountain peacock pheasant (Bruning).

North American Regional Studbooks are kept for the gorilla (Wharton), the Mauritius pink pigeon (Hundgen), the Waldrapp ibis (Mark Hofling), and the scarlet ibis (Annarie Lyles).

conferences as well as successful breeding programs for tortoises and lemurs and release programs for lemurs.

Including this year's 32 hatchlings, the Center has now bred 212 Malagasy radiated tortoises since 1981. Along with a parallel program at the Gladys Porter Zoo in Brownsville, Texas, the Center's success has given a formidable boost to the survival of this species.

The even rarer angulated tortoise, or anganoka, poses a more challenging problem. Breeding for this species, considered the world's most endangered tortoise with fewer than 200 animals left in the wild, has been attempted unsuccessfully at the Honolulu Zoo (1972-85) and since 1981 at St. Catherines, where the only potential breeding group outside Madagascar now exists. During the year a male, on loan from the Jersey Wildlife Preservation Trust but imported from Madagascar expressly for the Society's program, was added to the Center's existing group of one male and two females. Recognizing that multi-male groups are more likely to breed, it is hoped that the new male will provide the motivation needed to prevent the population's extinction.

Another Madagascan species, the ring-tailed lemur, is now flourishing in two groups of free-ranging animals on the island. The second troop, brought

in from the Duke University Primate Center, was settled 1,000 meters north of the existing troop. At first, there were heated interactions. Soon, however, territories were established and peace prevailed. Breeding was exceptional, with four births between the two troops.

The only free-ranging troop of endangered lion-tailed macaques outside India continued to show progress in adapting to the wilds of St. Catherines, roaming the live oak canopy in search of flora and fauna for taste-testing and feeding. A birth was recorded in March, and a new male introduced in April quickly



*Angulated tortoises trying to avoid extinction.*



asserted his dominance over the three sub-adult males in the troop.

Studies of the macaques begun by Primatologist Lydia Flewelling will be continued by researchers under a cooperative agreement with the San Diego Zoo. The possibility of reintroducing lion-tails to their native Western Ghats in India will also be investigated.

Some progress was made in the nesting of notoriously hard-to-breed large, solitary storks. The Center's three pairs of saddle-billed storks have constructed nests each fall for the last two years. In November, after some elaborate courting and breeding behavior, the first egg of a saddle-bill in captivity was laid. Though the egg was subsequently broken, it represented a hopeful beginning for breeding in a spectacular avian family.

Several new species were added to the Center's breeding programs. A pair of critically endangered yellow-shouldered Amazon parrots from coastal Venezuela bred and hatched a chick in a surprisingly short time. One of only two pairs of Australian yellow-tailed black cockatoos in North American collections were acquired. And a small group of lesser kudu, an antelope species declining in East Africa due to overhunting and habitat destruction, will begin a breeding effort to raise the total captive population for the species above the 30-40 animals that have been maintained over the past ten years.

### New York Aquarium for Wildlife Conservation

#### *Birth of a Cetacean.*

On successive Wednesdays in August 1991, the 7th and 14th, Aquarium staff, Society veterinarians, and researchers from Woods Hole Oceanographic Institute witnessed the birth of two male Beluga whales. After four months, they became the longest-surviving Aquarium-born Beluga babies, and they continue to thrive.

A phone call just after midnight with the message "this is not a drill" signaled the start of the first birth, to Natasha, a seven-year-old first-time mother. Emerging tail-first (the normal Beluga way), the calf immediately swam to the surface for his first breath. But it was not until 33 hours after birth that he finally began to nurse, ending the suspense of onlookers.

The second calf, on the other hand, began to nurse after only 17 hours. His mother, an older female



Feeding time for the baby Belugas and their mothers, with Aquarium Director Lou Garibaldi and Senior Trainer Martha Hiatt-Saif.

named Kathi, had previously given birth unsuccessfully in 1981. Aquarium staff and volunteers watched both babies 24 hours a day, documenting nursing behavior and timing. This data, now being prepared for scientific publication, has already been useful to other institutions expecting Beluga births.

The arrival in November of Bunky, a male sea otter from the Monterey Bay Aquarium, began the acquisition of animals that will inhabit Sea Cliffs, the Aquarium's dramatic complex of coastal environments scheduled to open in 1993. Bunky was hand-reared as a rescued orphan washed ashore at San Simeon, California, and is the first sea otter to leave the state, where the species has made a comeback after becoming nearly extinct early in the century. A successful rescue program has enabled Monterey Bay to return orphaned otters to the Pacific Ocean, and now the New York Aquarium will provide a place for animals that are rescued but unable to withstand the rigors of the wild. A second sea otter, Elsa, joined Bunky in June to form, it is hoped, the beginning of a breeding program in New York.

In the World Financial Center of Battery Park City, not far from the Aquarium's original Manhattan site, Aquarium staff mounted an extensive and dramatic exhibition on the ecology and conservation of coral reefs. "Underwater Cities: The World of the Coral Reef," sponsored by the World Financial Center Arts and Events Program, the Olympus Corporation, and the Society, filled the glass-enclosed Winter Garden's mezzanine with 11 tanks, front- and backlit pho-



tographs, and a world planning map showing coral reefs around the world and relevant Society conservation projects.

Thousands of people visited the exhibit, where they were offered tours by Aquarium volunteers and literature on the plight of coral reefs and what we are doing about them. After its two-month run in Manhattan, from January 29 through March 30, "Underwater Cities" continued its life in the changing exhibition gallery of Discovery Cove at the Aquarium.

Among the many renovations was the reconditioning of the outside wet lab, which was renamed the Nixon Griffis Research Laboratory, in honor of a long-time trustee and member of the Aquarium and Osborn Laboratories Planning Committee. The floor, walls, and lighting were redone, and new life support systems were installed for live corals and deep ocean animals, the latter requiring refrigerated water.

Another renovation involved the *Andrea Doria* exhibit inside the Shark Tank. Along with the safe that was retrieved from the ship by Peter Gimbel and his wife Elga Andersen, there are now graphic displays recounting the sinking of the *Andrea Doria* and explaining the Gimbels' salvage effort.

Aquarium research at the Osborn Laboratories of Marine Sciences (OLMS) was reorganized to

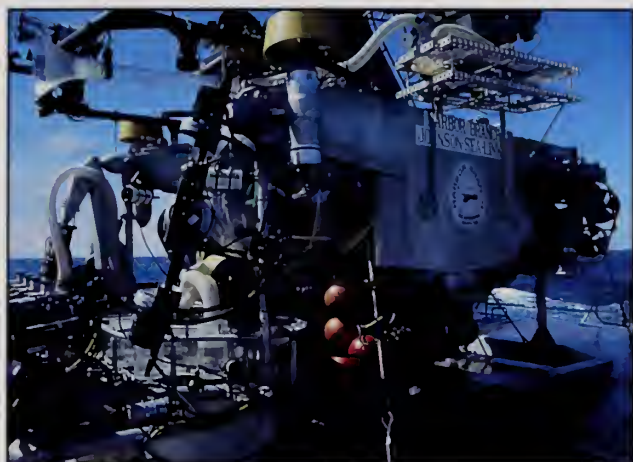
focus on three primary programs. First, the aquarium sciences research initiative includes work on breeding, diseases, nutrition, and the impacts of water quality on aquatic animals in the Aquarium. Second, the local waters initiative combines research on the Hudson River estuary and Jamaica Bay with direct conservation measures and new education programs. And third, a major aquatic conservation program encompasses the Coral Reef Conservation Initiative and the cooperative Mexican desert fishes research and species preservation program.

The Coral Reef Initiative, which might also be named "Coral Reefs . . . Before It's Too Late," brings together field research and conservation efforts by the Society's International Division with field and laboratory work by OLMS. A Coral Culture Laboratory begun after a field trip with the Bermuda Aquarium, will expand over the next year to keep live corals for OLMS and outside researchers. Thirty-five coral species are being maintained at the lab, and studies in basic biology, physiology, and genetics will help us understand their ecological role and significance.

Deep-sea organisms were the subject of a project in the waters around Bermuda and elsewhere. The ocean depths were thought to be devoid of life until the mid-1800s. In 1934, the Society's Tropical

Part of the "Underwater Cities" exhibit at the World Financial Center.





*Johnson-Sea-Link submarine used to capture deep-sea fishes.*

Research Director William Beebe made his historic bathysphere dive to 3,028 feet near Bermuda, where he was the first to observe the strange-looking creatures of the deep in their habitat.

Last year, with help from the Bermuda Aquarium, Associate Curator Dennis Thoney tested two traps designed by Aquarium staff to capture fishes deep in the ocean. Following modifications to permit slow decompression on deck, the traps were tested again during two cruises funded by Woods Hole Oceanographic Institute. The research submarine *Johnson-Sea-Link* carried the traps down to 3,000 feet off the coasts of New Jersey and St. Croix, Virgin Islands, where Dr. Thoney was able to observe how fishes and invertebrates behave toward the traps. Brought up were 20 fishes and 31 *Bathynomus*, which are voracious, predatory, one-foot-long deep sea crustaceans related to the common pill bug found in gardens. Several of these organisms are thriving at the Aquarium and were scheduled for display by fall 1992.

In Mexico, a major new protocol of cooperation was signed with the Autonomous University of Nuevo Leon (UANL) to identify fish species in danger and to preserve them through aquarium breeding. This is the beginning of a cooperative effort involving a dozen member institutions of the American Association of Zoological Parks and Aquariums (AAZPA).

In February 1992, Assistant Curator Paul Loiselle conducted a two-week survey of Mexican aquatic habitats in the Chihuahuan desert to determine their viability and the effectiveness of conservation efforts by UANL. Under Arcadio Valdes and his students, the Centro para la Reproducción de los

Peces del Desierto en Peligro de Extinción has created two dozen outdoor ponds for breeding ten seriously endangered fish species.

Dr. Loiselle documented the rescue of the last living specimens of Alvarez's pupfish and the El Potosi dwarf pupfish from a small remnant of the spring and marsh system that formerly covered several acres near the town of El Potosi. Because both species are being bred at UANL and the New York Aquarium, they will survive the demise of their habitat.

Other desert fish have not been so fortunate. Two of the four pupfish endemic to springs in the neighboring Sandia Valley were exterminated within five years of their discovery. Based on the degraded condition of their habitats, threatened primarily by the massive pumping of groundwater, the prospects of the remaining two are grim. At current rates of use, the water table in northern Mexico is dropping so rapidly that elimination of 90 percent of all aquatic habitats in the Chihuahuan and Sonoran deserts and the consequent extinction of their associated faunas by the turn of the century is inevitable. Only timely human intervention can prevent a significant loss of aquatic biodiversity in the near term and preserve the option of future restoration of these unique habitats.

## Central Park Wildlife Conservation Center

### *Golden Opportunities.*

With the acquisition of four golden-headed lion tamarins, the Central Park Wildlife Conservation Center joins the worldwide captive breeding program designed to save this species from extinction. Indig-



*Golden-headed lion tamarin.*



enous to the lowland rain forests of Brazil, these tiny primates are critically endangered as a result of habitat loss. Each year one to five percent of prime tamarin habitat is destroyed to make way for plantations, cattle pastures, and human settlements, and it has been estimated that 98 percent of the golden-headed lion tamarin's original forest home has disappeared.

In established breeding programs at the Center, 273 young were born or hatched, including two female black-and-white colobus monkeys, two tufted puffins, and one gentoo penguin. With the penguin chick on exhibit, visitors had a chance to see penguin parenthood in action. In the Tropic Zone, green tree pythons, Asian brown tortoises, and green-and-black poison dart frogs were among the reptiles and amphibians that produced offspring. Staff research on the nutrition and propagation of *Dendrobates* frogs helped to assure the continued breeding success of the poison dart frogs, a threatened species that has bred and metamorphosed at the Center for three years.

Significant improvements at the Center included a remodeled polar bear denning area with closed circuit television capability and a new system of hand-painted signs to identify the birds in the Tropic Zone aviary. The Horticulture Department continued its program of using native plants to attract birds and butterflies to the gardens.

The Gallery hosted three exhibitions of wildlife art. *Wildlife Images 1991* featured works in several media, including paintings by noted wildlife artist Guy Coheleach. *Arthur Singer: Paintings of Birds of the Tropics* was devoted to a lifetime of paintings and drawings by this acclaimed artist of the rain forest and its wildlife. *Untamed Images: Photographs by Louis Bernstein* focused on images of animals at the New York Aquarium and International Wildlife Conservation Park that have dominated Bernstein's later work.

The Winter Holiday Festival, a special event at the Center in December 1991, focused on a "Conservation Forest." Five trees represented five global regions where the Society's field program operates. Visitors strolling through the "forest" had an opportunity to learn about conservation issues and become familiar with the work of Society scientists around the world.



Mayor David Dinkins feeds sea lion at opening of the Queens Wildlife Conservation Center.

### Queens and Prospect Park Wildlife Conservation Centers

#### *Grand Opening, Planned Opening.*

After nearly four years and \$16 million in renovations, the Queens Wildlife Conservation Center opened to the public on June 25, 1992. Pumas, black bears, American bison and other species native to North America are displayed in twelve naturalistic outdoor environments and the refurbished geodesic aviary, originally designed by Buckminster Fuller. In the domestic animal area, graphics trace the history of such familiar creatures as horses, sheep, goats, and rabbits.

Animals for the Center came from collections around the country, including other Society facilities. Bison, Roosevelt elk, California sea lions, and bobcat arrived from the Bronx Wildlife Park. Another sea lion was acquired from the Central Park Center. Additional species include sandhill cranes, cattle egrets, black-tailed prairie dogs, wild turkeys, and coyotes.

Renovation of the Prospect Park Center, which is being transformed into a children's zoo, is scheduled for completion in 1993.

### Exhibition and Graphic Arts

#### *Conservation by Design.*

After several years of intensive work on major projects, the department this year focused on the development of a more coherent visual expression of the Society's central purpose, that of saving wildlife on an international scale. At the International Wildlife Conservation



Park and other Society facilities, this is evident in how habitat exhibitions and graphics are being planned and executed. Abroad, it is reflected in a wide array of interpretive sites being developed around the globe.

Conservation is the theme of renewal at the World of Birds. The first phase of improvements represents a generation of advance in exhibition techniques since the innovative and influential building opened in 1972. Three separate exhibits have been transformed into linked environments in which the visitor is made aware of threats to avian habitats and how they are contested.

A lush Asian forest, including a huge felled tree and stump fabricated by staff artisans, is seen against a dramatic backdrop mural of forest destroyed by slash-and-burn settlement. The trees are laden with epiphytes and giant lianas. Farther on is a Venezuelan cloud forest protected by "No Hunting" signs, where birds such as curassows are nevertheless still threatened. Finally, a segment of New England forest describes the "triple jeopardy" of eastern songbirds, which are imperiled by development along the eastern seaboard, the disappearance of their migratory rest stops, and the destruction of their winter breeding grounds in Central and South America.

A new interpretive gallery, designed with Chermayeff and Geismar and the Stein Partnership, addresses the worldwide loss of bird species and highlights Society programs combatting these losses. The

public spaces are being entirely revamped to facilitate visual enjoyment and education, and a new system of graphics is being tested to make the message a more integral part of the scene.

Other improvements were made around the Park. A pygmy goat corral, giant tree yuccas, and other exotic plants were added at the new Baboon Reserve-African Market, which received the 1991 Exhibit of the Year Award from the American Association of Zoological Parks and Aquariums. Work progressed on the former Elk Range, which will become a meadow for endangered Asian deer, with new plantings, improved viewing areas, and a new animal management area. In the Holarctic area, experimental directional signage was installed as part of a long-range program to improve visitor circulation and orientation.

Conceptual designs completed for Project Gorilla, the Park's next major exhibition, embody a new idea for integrating local and international conservation efforts. Five acres of lush tropical forest will provide breeding sanctuary for gorillas, guenons, mandrills, okapi, and other endangered Equatorial African wildlife. Visitors will be immersed in a landscape with compelling and intimate vistas of the animals and an increasingly intense message about their ecology and conservation. Uniquely, this facility will be linked directly with efforts in the wild, providing information about and actively raising funds for Society projects in African rain forests. Horticulture staff is

*New signage near Northern Ponds at the International Wildlife Conservation Park.*





*Creative Director Walter Deichmann and Exhibit Designer Susan Chin review plans for the Tortuguero project in Panama.*

already cultivating giant-leafed magnolia, hardy ebonies, specialty bamboos, and large-leafed vines in microclimate shelters near Wild Asia for eventual use in Project Gorilla.

The department's international role has evolved in more literal ways during the year, a new direction that involves applying methods developed in New York to wildlife conservation, exhibition, and interpretation in tropical nations. Working with local governments and concerned non-governmental organizations, staff planners and designers are helping to establish educational wildlife centers and opportunities for income-producing ecotourism in several key areas where the Society has had a longstanding presence.

At Tortuguero National Park in Costa Rica, Society architects and exhibit designers are assisting the Caribbean Conservation Corps in developing a beachside interpretive center to house exhibits on the park's unique ecology. The sea turtles that nest here are the main attraction, but the center will also reveal the more subtle components of Tortuguero's barrier beaches, lagoons, and lowland forests.

In Uganda, the US Agency for International Development (USAID) and the Ugandan government sponsored a Society study proposing conversion of a small existing zoo in Entebbe into a wildlife education center. Naturalistic exhibits of local fauna (Uganda kob, shoebills, chimpanzee, buffalo, leopards, and other wildlife) would complement a system of nature trails and a classroom-dormitory for Ugandan school groups and wildlife clubs. Endorsement for the proposal has been enthusiastic; the final report was presented to Mrs. Yoweri Museveni, the first lady of

Uganda, who visited the Bronx and Central Park facilities in November.

Similar projects in Belize, Kenya, and Guatemala are in preliminary stages of development.

With such projects the Society is becoming both more diverse and more integrated in the prosecution of wildlife conservation, environmental education, science, and public service, in New York and around the world. Along with that integration of purpose and program has evolved the need for a unified image and graphic identity, one that is immediately recognizable whether in connection with a breeding program for birds of paradise in the Bronx, an ecology curriculum for students throughout the United States, or a scientifically based effort to save black rhinos in Africa.

Spearheaded by the Exhibition and Graphic Arts Department, an interdepartmental committee was formed during the year to solve this problem. The Imagoes Group, which, like its insect namesake hopes to achieve a final metamorphosis, was in the process of choosing a design firm that will work with the Society to create a graphic identity for all visible manifestations of the Society's work, from educational materials to entrance gates, press releases to banners and neckties.

### **Wildlife Health Sciences**

#### *Expanding Facilities and Programs.*

The new Emil P. Dolensek Research Suite, opened in July 1991, reflects the growing international role of the department and its integration with other Society wildlife conservation programs. Included in this addition to the Animal Health Center are the Biotelemetry Studies Laboratory, the Behavioral Sciences Computer Laboratory, offices for the Field Veterinary Unit and Nutrition Studies, and a pathology conference room. The suite is a tribute to the generosity of Trustee Shirley Katzenbach, whose dedication to and interest in the department's activities were unmatched before her death in September.

Based at the Dolensek Suite, several activities of the field vet, Dr. William Karesh, merged with those of the biotelemetry program, run by Karesh, Chief Veterinarian Bob Cook, and Mammals Curator Fred Koontz. For the first time forest elephants were successfully outfitted with working satellite-tracking transmitters in the wild, in Zaire and Cameroon. We are beginning to receive the first detailed information



about the movements and territorial needs of this threatened species. In Venezuela, transmitters deployed on anacondas by Veterinarian Paul Calle, working with Herpetology Supervisor Bill Holmstrom and field scientist John Thorbjarnarson, are pouring out physiological as well as geographic data. And in Bolivia's Noel Kempff National Park, Dr. Karesh helped Research Fellow Andrew Taber document the health status of free-ranging tapirs and white-lipped peccaries through biotelemetry.

Dr. Karesh's travels as field vet also took him to Guatemala, where he trained Guatemalan vets to deal with confiscated wildlife, and to Indonesia to present, with Dr. Cook, the first wildlife disease and management course offered in that country. The course included more than 80 hours of intensive classroom and hands-on training for Indonesian veterinarians.

At field vet headquarters in the Bronx, continuity for the worldwide program was established with the addition of Emily Jaffe as program coordinator.

The Nutritional Studies Unit also continued to expand its international outreach under Dr. Ellen Dierenfeld. Laboratory volunteers and students were supervised by Nutrition Technician Marianne Pennino in the analysis of wild feedstuffs, some of it collected by Society field biologists. Included were seeds cracked by macaws in Peru, leaves eaten by gorillas in Rwanda, fruits devoured by duikers in Zaire, forages from the Gobi

Desert, and insects caught by aye-ayes in Madagascar.

In October and November, Dr. Dierenfeld participated as a group leader in the Smithsonian Institution's international course on Management and Biology of Wild Animals in Captivity held in Cali, Colombia. It was the first time that a section on nutrition was included in the course, which will be published in Spanish and English. With funding from the Nixon Griffis Fund for Zoological Research, Dr. Dierenfeld traveled to the Wolong Reserve in Sichuan Province, China, to examine nutrients in bamboo eaten by giant pandas in order to refine captive diets for the species. She also evaluated diets for captive St. Vincent's parrots on their native island and for cheetahs in collections around the world.

Several new cooperative studies were initiated at in the Bronx. A joint project with Manhattan College is investigating at what point vitamin E reaches its highest level in the maturation of certain plants, and a program with Fordham University is training graduate students in feed analysis. The visiting scientist program was inaugurated by Dr. Nancy Conklin of Harvard University, who spent four months at the Animal Health Center conducting feed digestion and passage trials with duikers, brocket deer, mouse deer, pudu, and babirusa. This was the first such comparative study of small ungulates.

The Nutrition Studies Unit was bolstered by the arrival of Susan Spencer as staff dietician. Working

*International vet Dr. William Karesh conducts a wildlife course in Sarawak, Malaysian Borneo.*







*Nutritionist Ellen Dierenfeld collecting bamboo in China.*

closely with Commissary Supervisor George Fielding and his staff, with animal curators, supervisors, and keepers, she will oversee diet reviews and assist with feed quality controls for animals at all Society facilities.

Reproduction projects included the intrauterine artificial insemination of a leopard cat in the World of Darkness with semen that had been frozen at the National Zoo in Washington, D.C. Dr. Jo Gayle Howard of the National Zoo's Reproduction Studies Unit initiated the project and worked with Veterinarian Dr. Bonnie Raphael and the Mammal Department under General Curator James Doherty. A healthy cub, born in the spring, was the first successful result of this procedure in cats.

Other reproductive programs stressed selective breeding, the use of recently developed contraceptive methods such as feed additives, birth control implants, vaccinations, and vasectomies to prevent unplanned breeding in a variety of hoofstock, primates, and waterfowl.

Two major additions were made to the Animal Health Center's clinical technology. An automated hematology unit donated by the Roche Diagnostic Systems, Inc. makes it possible to obtain blood counts quickly and accurately for animals with widely varying blood composition. A CO<sub>2</sub> laser unit was given by Roosevelt-St. Lukes Hospital through the efforts of Surgery Consultant Dr. Jim Grillo. Dr. Cook has already used the unit on foot infections in birds and in the removal of tumors from sea turtles,

conures, and other animals, procedures where precision and minimal trauma are essential.

Valuable information was gathered at the Wildlife Conservation Park by the veterinarians, Technician Supervisor Judith Kramer, and Technicians Pamela Manning and Ivan Llanes on the exposure of free-ranging wildlife to environmental toxins, particularly lead poisoning. New chelating agents were evaluated for the treatment of this condition.

Clinical care at the Aquarium took a dramatic turn with the birth of two Beluga whales in August. Their survival was an historic event that depended in large part on curing critical bacterial and fungal infections in one of the calves. Drs. Cook and Calle worked endless hours with Aquarium staff, including trainers and keepers, laboratory supervisor Kate McClave, and veterinary technician Shelagh Massucci, to save the young Beluga's life. Dr. Calle also traveled to Monterey Bay Aquarium to assist in bringing sea otters to New York for the Aquarium's new Sea Cliffs complex.

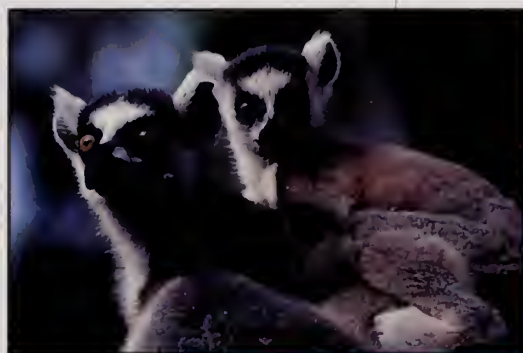
Dr. Mark Stetter, formerly of the Audubon Park Zoo in New Orleans, was appointed resident in clinical medicine. He joins Dr. Calle in caring for animals at the Aquarium and the City Wildlife Conservation Centers, including the newly renovated Queens facility, which opened in June.

The Pathology Unit, under Distinguished Scientist in Pathology Dr. Tracey McNamara, continued to train Dr. John Trupkewicz, resident in wildlife



*Leopard cat and cub from artificial insemination.*

pathology as he completed the first year of a three-year training program in cooperation with Dr. Sam Liu and the pathology staff of the Animal Medical Center. Dr. McNamara was appointed visiting assistant professor in pathology at Albert Einstein College of Medicine, where she will teach a course in comparative pathology. Histotechnologist Alfred Ngbokoli, who heads the Animal Health Center's pathology laboratory, was honored by the New York Regional and State Histotechnologists Society with a scholarship for professional excellence.



### Wildlife Management Services

#### *Tracking for Conservation.*

Detecting genetic distinctions, often quite subtle, is among the department's technical and practical tools in helping to save endangered species. DNA sequence data gathered during the year by the conservation genetics program showed that two geographically separate populations of Sumatran rhinos, in Sumatra and peninsular Malaysia, are, in fact, genetically distinct. Presented in London to the Global Rhino Action Plan Workshop of the IUCN-Captive Breeding Specialist Group (CBSG), this information is now a key factor in the formal management strategy for Sumatran rhinos. Studies continue on these population differences.

Studies to address subspecies questions in South American caiman through molecular procedures were begun by Conservation Geneticist George Amato in collaboration with Central Park Curator Peter Brazaitis and John Gatesy of the American Museum of Natural History. Preliminary data suggests that the project will be important for species management and in identifying illegally traded skins.

A CBSG meeting in Queensland, Australia, was attended by Curator Danny Wharton, co-chairman of the AAZPA Marsupial and Monotreme Taxon Advisory Group. While developing management recommendations for most of the marsupials and monotremes in the Australasian region, the group

identified tree kangaroos and the long-beaked echidna of New Zealand as likely candidates for cooperative breeding programs. Dr. Wharton was also named chairman of the AAZPA's Species Survival Plan for the gorilla, for which he had served five years as the North American Regional Studbook Keeper.

Basic keeper training at the Wildlife Conservation Park was completed by eleven new keepers and begun by ten more. Twelve classes were added, including several tailored to the needs of different animal departments.

A new three-part series on "Issues and Answers in Animal Management Philosophy" was attended by 40 keepers and staff. Panel and audience discussions, moderated by General Director William Conway, explored "Animal Surplus

If we can maintain both the animal and its habitat, and the people who live near that habitat want the animal back and are willing to protect it, then reintroducing species will have a chance and captive breeding will become doubly important.

James G. Doherty  
General Curator,  
Carter Chair of Mammalogy

and Euthanasia," "Animal Rights and *ex-situ* Conservation," and "Species Choices in the Zoo Ark."

Research resources at the library were enhanced by the addition of two new IBM computers, speeding retrieval times and improving displays. The computerized library catalog, in its second year of conversion from index cards, grew from 1,600 to more than 3,100 titles. It is hoped that this and other databases, including a new bibliography of International Division staff publications will eventually be available by computer network and modem. Society projects around the world have been brought closer by the addition of electronic mail.

Early Bird Department records were microfilmed for the archives. New air-conditioning and a sump-pump there have stabilized the environment for preserving historical documents and reduced the danger of flooding.

Animal Records staff arranged 214 shipments involving 898 animals between the Zoo and zoological collections, public and private, around the world. Foreign transactions required the acquisition of 36 Federal permits from the United States departments of agriculture and interior.



## Animal Census (at Dec. 31, 1991)

### International Wildlife Conservation Park ("Bronx Zoo")

	Species and subspecies	Specimens on site	Births/Hatchings
<b>Mammals</b>			
Marsupialia—Kangaroos, phalangers, etc.	2	49	3
Insectivora—Hedgehogs	3	9	9
Chiroptera—Bats	7	606	290
Primates—Apes, monkeys, marmosets, etc.	27	191	61
Edentata—Armadillos, sloths, anteaters	1	2	0
Lagomorpha—Rabbits	1	2	0
Rodentia—Squirrels, porcupines, etc.	37	337	240
Carnivora—Bears, cats, dogs, etc.	23	86	10
Pinnipedia—Sea lions, etc.	1	11	3
Proboscidea—Elephants	1	6	0
Hyracoidea—Hyraxes	1	10	6
Perissodactyla—Horses, rhinos, etc.	5	37	1
Artiodactyla—Cattle, sheep, antelope, etc.	29	414	51
<b>Totals</b>	<b>138</b>	<b>1,760</b>	<b>674</b>
<b>Birds</b>			
Struthioniformes—Ostriches	1	1	0
Rheiformes—Rheas	1	4	1
Casuariiformes—Cassowaries, emu	3	9	0
Tinamiformes—Tinamous	1	2	0
Sphenisciformes—Penguins	2	10	0
Pelicaniformes—Pelicans, cormorants	3	20	0
Ciconiiformes—Herons, storks, flamingos, etc.	10	111	13
Anseriformes—Swans, ducks, geese, screamers	44	263	22
Falconiformes—Vultures, hawks, eagles	5	13	0
Galliformes—Quail, pheasant, etc.	25	79	7
Gruiformes—Hemipodes, cranes, rails, etc.	15	54	13
Charadriiformes—Plovers, gulls, etc.	19	101	7
Columbiformes—Pigeons, doves	11	28	0
Psittaciformes—Parrots	10	21	0
Cuculiformes—Touracos	4	15	3
Strigiformes—Owls	6	8	0
Caprimulgiformes—Frogmouths	1	2	0
Coliiformes—Mousebirds	1	2	0
Coraciiformes—Kingfishers, hornbills, etc.	16	31	1
Piciformes—Barbets, toucans, woodpeckers	4	4	0
Passeriformes—Perching birds	73	209	24
<b>Totals</b>	<b>255</b>	<b>987</b>	<b>91</b>
<b>Amphibians and Reptiles</b>			
Caudata—Salamanders	4	13	0
Anura—Frogs, toads	16	94	536
Chelonia—Turtles	44	348	39
Crocodylia—Alligators, caimans, crocodiles	8	133	11
Squamata (Sauria)—Lizards	22	65	18
Squamata (Serpentes)—Snakes	43	208	29
<b>Totals</b>	<b>137</b>	<b>861</b>	<b>633</b>
<b>Wildlife Conservation Park Census</b>	<b>530</b>	<b>3,608</b>	<b>1,398</b>

N.B. The International Wildlife Conservation Park census includes 1,264 animals of 173 endangered, threatened, or vulnerable species. 556 animals were on loan to 107 other wildlife collections, and 391 animals were on loan from 69 wildlife collections.



### Children's Zoo, International Wildlife Conservation Park

	Species and subspecies	Specimens owned	Births/Hatchings
<b>Mammals</b>			
Marsupialia—Wallabies	1	4	0
Insectivora—Hedgehogs	3	10	0
Primates—Lemurs	1	8	0
Edentata—Armadillos	3	3	0
Lagomorpha—Rabbits	1	12	4
Rodentia—Mice, porcupines, etc.	6	33	0
Carnivora—Foxes, ferrets	6	21	0
Perissodactyla—Horses	2	5	1
Artiodactyla—Goats, sheep, camels, etc.	6	50	12
<b>Totals</b>	<b>29</b>	<b>146</b>	<b>18</b>
<b>Birds</b>			
Ciconiiformes—Hérons	1	24	11
Anseriformes—Ducks, geese	9	44	30
Falconiformes—Falcons	1	2	0
Galliformes—Chickens	3	44	200
Columbiformes—Doves	2	3	0
Psittaciformes—Parrots	11	6	0
Strigiformes—Owls	4	12	0
Caprimulgiformes—Frogmouths	1	1	0
Piciformes—Toucans	1	1	0
Passeriformes—Perching birds	1	1	0
<b>Totals</b>	<b>34</b>	<b>138</b>	<b>241</b>
<b>Amphibians and Reptiles</b>			
Anura—Frogs, toads	1	4	0
Chelonia—Turtles	8	51	0
Crocodylia—Alligators	1	11	0
Squamata (Sauria)—Lizards	5	9	0
Squamata (Serpentes)—Snakes	9	30	0
<b>Totals</b>	<b>24</b>	<b>105</b>	<b>0</b>
<b>Children's Zoo Census</b>	<b>87</b>	<b>389</b>	<b>259</b>

N.B. The Children's Zoo census includes 98 animals of 37 endangered, threatened, or vulnerable species. 4 animals were on loan to 3 other wildlife collections, and 23 were on loan from 10 other wildlife collections.

### St. Catherines Wildlife Conservation Center, Georgia

	Species and subspecies	Specimens owned	Births/Hatchings
<b>Mammals</b>			
Marsupialia—Wallabies	1	11	0
Primates—Lemurs, macaques	4	52	12
Perissodactyla—Zebras	1	16	1
Artiodactyla—Antelope	8	87	26
<b>Totals</b>	<b>14</b>	<b>166</b>	<b>39</b>

# SANCTUARIES FOR WILDLIFE

## St. Catherines Wildlife Conservation Center, Georgia (continued)

	Species and subspecies	Specimens owned	Births/Hatchings
<b>Birds</b>			
Ciconiiformes—Storks	3	20	0
Anseriformes—Geese	1	3	0
Galliformes—Pheasants	6	20	4
Gruiformes—Cranes, bustards	10	50	1
Columbiformes—Pigeons	1	0	1
Psittaciformes—Parrots	10	33	14
Coraciiformes—Hornbills	4	13	1
<b>Totals</b>	<b>35</b>	<b>139</b>	<b>20</b>
<b>Reptiles</b>			
Chelonia—Turtles	2	79	8
Squamata (Serpentes)—Snakes	1	2	0
<b>Totals</b>	<b>3</b>	<b>81</b>	<b>8</b>
<b>Wildlife Conservation Center Census</b>	<b>52</b>	<b>386</b>	<b>67</b>

N.B. The Wildlife Conservation Center census includes 314 animals of 33 endangered, threatened, or vulnerable species. 124 animals were on loan to 39 other wildlife collections, and 82 were on loan from 30 other wildlife collections.

## Central Park Wildlife Conservation Center

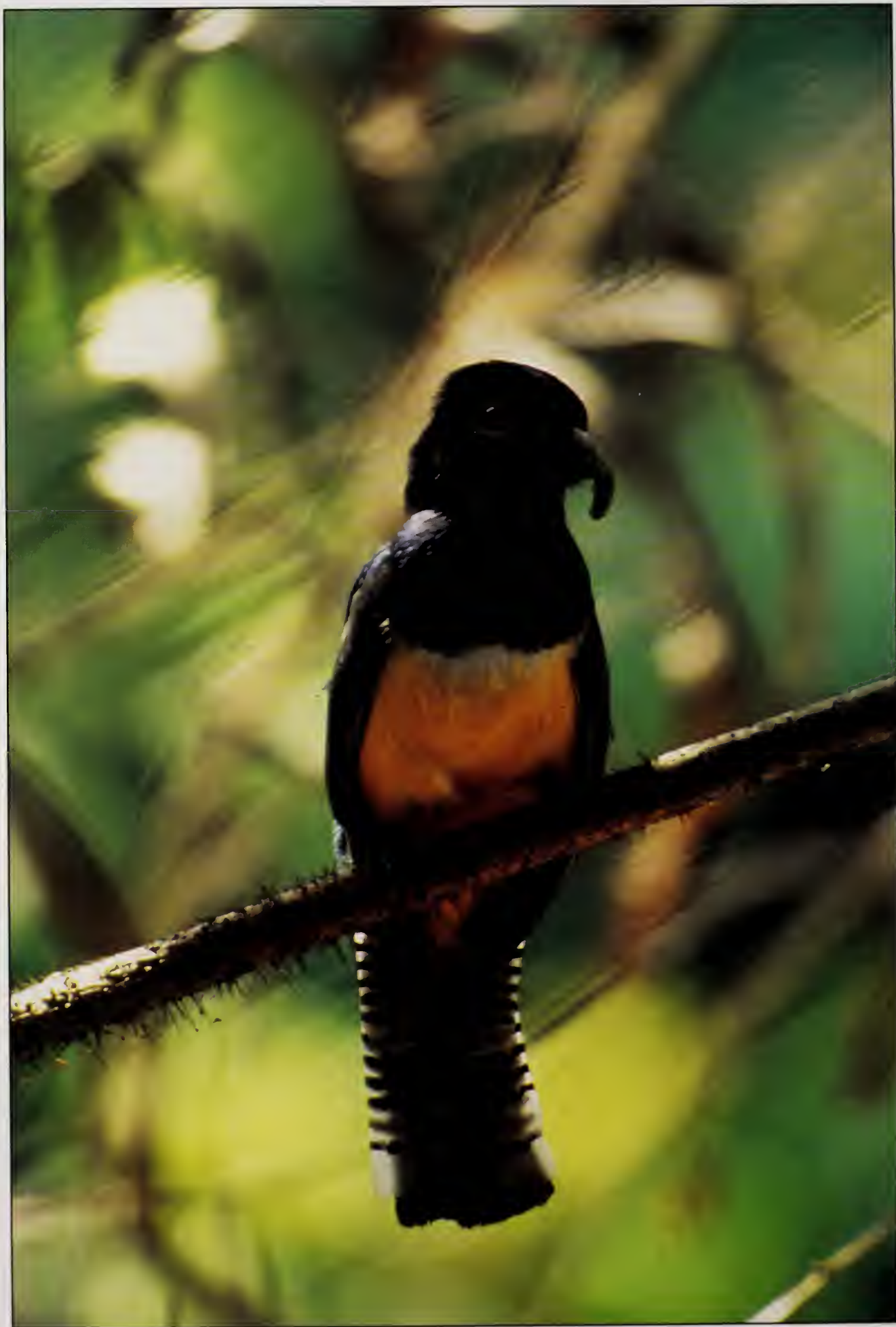
	Species and subspecies	Specimens in Zoo	Births/Hatchings
<b>Mammals</b>			
Insectivora—Tree shrews	1	1	0
Primates—Monkeys	5	37	3
Rodentia—Accouchis, squirrels	2	4	0
Carnivora—Bears, otters, pandas	4	9	0
Pinnipedia—Seals, sea lions	2	8	0
<b>Totals</b>	<b>14</b>	<b>59</b>	<b>3</b>
<b>Birds</b>			
Sphenisciformes—Penguins	2	33	1
Anseriformes—Swans, ducks, geese	6	17	0
Galliformes—Partridges, tragopans	2	5	0
Charadriiformes—Puffins	1	24	2
Columbiformes—Doves, pigeons	3	7	1
Psittaciformes—Parrots	1	4	0
Cuculiformes—Turacos	1	2	0
Strigiformes—Owls	1	1	0
Piciformes—Toucans	1	2	0
Passeriformes—Perching birds	22	86	34
<b>Totals</b>	<b>40</b>	<b>181</b>	<b>38</b>
<b>Amphibians and Reptiles</b>			
Caudata—Salamanders	1	2	0
Anura—Toads and frogs	10	44	139
Chelonia—Turtles	12	59	15
Crocodylia—Caiman	1	2	0
Squamata Sauria—Lizards	12	89	17
Squamata Serpentes—Snakes	7	55	35
<b>Totals</b>	<b>43</b>	<b>251</b>	<b>282</b>
<b>Central Park WCC Census</b>	<b>97</b>	<b>613</b>	<b>195</b>



# SANCTUARIES FOR WILDLIFE

## New York Aquarium for Wildlife Conservation

Phylum	Class	Order	Species	Specimens	
Chordata	Chondrichthyes— Cartilaginous fishes: Sharks, rays, chimeras	Heterodontiformes—Horn shark	1	4	
		Squaliformes—Typical sharks: Dog fish, swell, sharks	8	22	
	Osteichthyes—Bony fishes	Rajiformes—Rays, skates	4	8	
		Lepidosireniformes—Lungfishes	2	5	
		Elopiformes—Tarpon, bonefish	1	3	
		Anguilliformes—Eels, morays	3	5	
		Osteoglossiformes—Arawana, arapaima, knifefish	2	4	
		Salmoniformes—Trouts	3	30	
		Cypriniformes—Minnows, carp, cavefish, piranha, tetra	8	650	
		Batrachoidiformes—Toadfishes	1	25	
		Atheriniformes—Platys, swordtails, killifish, silversides, needlefish, guppies	8	550	
		Beryciformes—Squirrelfishes, flashlight fish	6	30	
		Gasterosteiformes—Seahorses, pipefish	3	25	
		Perciformes—Perches, sea basses, porgies, cichlids, clownfish, butterflyfish, angelfish, chromis, parrotfish, batfish, grouper, damsel, flagtail goby, anthius	130	1,242	
		Pleuronectiformes—Flatfishes	4	15	
		Tetraodontiformes—Puffers, boxfish, triggerfish	8	20	
		Reptilia	Chelonia—Sea turtles	5	10
			Crocodylia—Caiman	1	3
		Aves	Sphenisciformes—Penguins	1	42
		Mammalia	Pinnipedia—Seals, sea lions, walrus	5	17
			Carnivora—Sea otters	1	1
	Cetacea—Whales, dolphins		2	10	
	Cnidaria	Anthozoa—Corals, anemones	20	200	
Annelid	Polychaeta—Marine worms	5	10		
Arthropoda	Crustacea—Lobsters, shrimps, crabs, isopods, etc.	8	150		
	Arichnida—Horseshoe crab	1	15		
Mollusca	Gastropoda—Snails, conch	5	200		
	Cephalopoda—Octopus, nautilus cuttlefish, squid	5	25		
Echinodermata	Asteroidea—Starfish	6	55		
	Holothuroidea— sea cucumbers	2	5		
	Echinoidea—Sea urchins	2	30		
Aquarium Census			263	3,429	



*Violaceous trogon in the Maya Mountains of Belize.*



# Saving Wildlife Around the World



The Society's global field division works to save wildlife by developing basic ecological and biological data; devising and maintaining long-term conservation strategies; advising local communities and national governments on conservation options; raising public environmental awareness, and training conservation professionals to carry on the work. Reports on 158 Society field projects in 41 countries around the world.

In a longhouse in Borneo, a researcher interviews dayak hunters about their hunting success and why so many species have disappeared. High in the Venezuelan cloud forest, a teacher instructs graduate students in the rudiments of conservation biology. An analyst glares at a computer screen trying to construct a multi-million dollar budget that will support a major conservation project in the flooded forest of central Brazil. Armed with a tranquilizer gun, a field scientist perches on a rickety platform in the Bolivian night, waiting for a tapir to visit the saltlick below. In a lodge in Kenya's Masai Mara, a conservationist argues with the local community council about the need to regulate tourist traffic in the park. An administrator in New York tries to figure out whether it is possible to get an Isuzu jeep into northern Tibet. A project director in Brazzaville discusses with Congolese government officials and foreign aid officials the design of the country's national park system.

All these people are part of the same organization, and the same effort to save biodiversity worldwide. During the year the process of integrating our far-flung programs intensified, within the Wildlife Conservation Society, and within the conservation community.

The field program has always stressed research, training, and implementation, and now many projects encompass all three. In Sarawak and Sabah, Malaysian Borneo, a new field training course, aimed at wildlife

department officials and managers as well as young field researchers, complements an active research and conservation program. Another new training program in the tropical forests of Equatorial Africa will provide support for the Society's active conservation efforts in the region. And in Venezuela, a well-established training program is producing the next generation of conservationists and helping the government create effective conservation programs throughout the national park system.

Uniquely among conservation organizations, the Society provides access to a wide range of disciplines. Field programs now draw on expertise in animal management and animal care, graphic design and exhibition planning, wildlife medicine and environmental education. The Society's Biotelemetry Studies Unit provided crucial support for forest elephant surveys in Zaire and Cameroon. Field programs continue to submit forage from the wild for analyses by Society nutritionists, this year from Mongolia, China, Indonesia, Peru, Rwanda, Zaire, and Madagascar. In Venezuela's flooded llanos, herpetology and veterinary personnel helped establish a radio-tracking program for anacondas. The Society's international field veterinarian was active in field programs in Guatemala, Indonesia, and Bolivia, while the Exhibition and Graphic Arts Department worked on projects in Kenya, Uganda, Belize, Costa Rica, and Guatemala.



Andrew Taber and assistant tracking tapirs in Bolivia.

Finally, the Society is integrating its field programs with those of other conservation organizations. Many such collaborations are already in place. During the last year we linked up with three New York City universities and the American Museum of Natural History to form the New York Consortium in Evolutionary Primatology. Funded by the National Science Foundation, this training program will encourage conservation oriented field studies of primates. We are also increasingly involved in conservation policy analysis and are working closely with other organizations in examining and making recommendations on regulating international wildlife trade. At the March meeting of the Convention on International Trade in Endangered Species (CITES) in Japan, Society delegates took an active role in advocating more stringent measures on the wild bird trade and continuing the ivory trade ban. These and other initiatives strengthen the purpose and effectiveness of our regional programs throughout the world.

We begin in Africa, where conservation over the past year has been carried out in a context of unprecedented political upheaval and uncertainty. Stirred by chronic poverty and inequality, and fanned by events in Eastern Europe, powerful winds of change have buffeted governments across the African continent. Fledgling democracies have already been spawned in several countries, and the process of political reform has been initiated in many others. Yet despite the many painful difficulties that attend this process, African nations have also demonstrated a strong commitment to conservation over the past year—and the Society has been there to help with critically important technical, institutional, and financial assistance.

## East African Savannas

### *Hope Under Fire.*

Perhaps no nation exemplifies the problems associated with political upheaval better than Ethiopia. In the wake of the central government's military defeat, rebels and others overran several parks, destroying buildings and equipment and hunting wildlife. For Claudio Sillero-Zubiri and Maria Gottelli, the indiscriminant shooting of the Ethiopian wolf (Simien jackal) not only put an end to their research but also pushed this highly endangered species to the brink of extinction.

Events in Ethiopia, however, also demonstrate the potential inherent in changing conditions and the critical role that the Society can play in the process. In Awash National Park, Cathy Schloeder and Mike Jacobs took on the function of intermediaries among three local ethnic groups, park staff, and local authorities in an effort to resolve land-use conflicts, while national staff played the same role in the Abijatta-Shalla Lakes Park. In both instances an opportunity now exists to replace the former highly centralized approach to park management with one that permits local input. In the short run, however, it is cases like that of the Ethiopian wolf that will require the most immediate remedial action on the part of the Society, government agencies, and local populations.

Local political and economic concerns have limited progress on efforts to keep the vital Kitengela migration corridor open between the Nairobi National Park and the outlying Athi Kapiti Plains. While ecologists and local Maasai agree on the importance of halting competing development schemes, the Maasai community must now work out equitable arrangements for the sharing of tourism revenues which are intended to pay for conservation easements on the land. Helen Gichohi is involved in this delicate discussion, while also monitoring the status of the Kitengela ecosystem, and remains hopeful that a solution can be found. The result will not only benefit the major migratory species but also enhance Nairobi Park's viability as a successful sanctuary for the endangered black rhino.

Elsewhere in Kenya, Chris Gakahu oversees the Society's ongoing assessment of tourism in and around the Masai-Mara reserve; Evans Mwangi is studying the impact of ecosystem isolation on wildlife in Nakuru National Park; John Waithaka continues his research on the status and ecological impact of elephants out-



side parks; and Andrew Muchiru has begun to monitor vegetation changes on abandoned Maasai grazing lands outside Amboseli National Park.

Within Amboseli, Senior Resource Ecologist David Western reports considerable progress in key areas of the long-term monitoring program he directs. With regard to tourism, the negative impact of vehicle misuse appears to be declining due to more aggressive controls and sanctions. At the same time, a more equitable means of sharing tourism revenues among local Maasai has been arranged. The Society also supported significant improvements in the system supplying water to the pastoral economy outside the park.

Programs in Tanzania have benefitted from one of the more stable political situations in Africa. Patricia Moehlman continues to work with national parks staff in Ngorongoro, Ruaha, Tarangire, and Manyara to collect, analyze, and interpret comprehensive biological information. Comparative data bases will enable managers to deal with the impact of growing human and domestic animal populations in and around the reserves. Meanwhile, Tanzanian personnel are receiving essential

training in applied research and management.

In the Ngorongoro Conservation Area, the National Science Foundation has funded an interdisciplinary expansion of the ongoing program. Greater attention will be given to pastoral ecology and human land-use issues, complementing the Society's monitoring of Ngorongoro's spectacular savanna wildlife. Additional funding is being sought to apply this information through improved management.

The escarpment corridor linking Lake Manyara National Park and Marang Forest, purchased by the Society last year, is being used by nearly 200 elephants, reports park ecologist Mr. Lejora. A corridor linking Manyara with Tarangire to the southeast would be the next priority, according to Moehlman. In another survey, Tarangire has been found to have the only healthy population of pancake tortoises in Tanzania. Cooperative efforts are now underway to halt the international pet trade in this endangered species.

## New Parks and Reserves.

Society field scientists played a leading role in the declaration of five parks and reserves during the past year.

- Okapi Wildlife Reserve, Zaire. 5,300 square miles in the Ituri Forest, covering a significant part of the okapi's range and including a national park and zones for traditional uses by the Mbuti people. Evolved out of work by John and Terese Hart in the Ituri Forest Project.
- Area in Honduras connecting the Bosawas Biosphere Reserve in Nicaragua and the Rio Platano Biosphere Reserve in Honduras. One of several areas where links and passages are being planned as part of the regional Paseo Pantera project. Homeland of the Tawahka Sumu people, whose situation was documented by grantee Vincent Murphy.
- Chiquibul National Park, Belize. 266,000 acres in the Maya Mountains of northern Belize, based on the studies and reserve planning of Bruce and Carolyn Miller. Hope to link with reserve areas in Guatemala.
- Slate Creek Preserve, Belize. Voluntary protected area established by private owners, with 2,000 acres pledged by the government. The Millers serve as research directors and advisors.
- Chang Tang Reserve, Tibet Autonomous Region. Expanded to 118,000 square miles in early 1992 by the Chinese government, with some good rangelands in the southern part where pastoralists and their livestock have been in conflict with wild yak, Tibetan antelope, Tibetan wild ass, and other species.



*The Maya Mountains of northern Belize.*



Cover story concerning the Society's work in Congo.

## African Forests

### *Establishing Safe Havens.*

While continuing their research on okapi and forest ecosystem dynamics, John and Terese Hart began a major new study on the basic ecology of the six duiker species that inhabit Zaire's Ituri Forest. The construction of a new field center for training Zairian and international students and staff, based on such research, is nearing completion. Long-term prospects for all work in the Ituri were greatly enhanced by the government's decision in May 1992 to create the Okapi Wildlife Reserve, 5,300 square miles of extremely rich rain forest where sustainable forms of use by traditional residents will be permitted. The Society was especially gratified by the generous credit Zaire officials accorded the Harts in the creation of the reserve.

South of Ituri, Jefferson Hall and Claude Sikubwabo conducted surveys of Grauer's gorilla. Their preliminary results showed a population in decline across a fragmented forest habitat, but final conclusions will have to wait until political conditions in the region are more settled.

Government officials in neighboring Congo signed a five-year accord with the Society to cooperate in identifying and establishing reserves in that country's untouched northern forests. Under the direction of Michael Fay and Marcellin Agnagna, work has already begun on the creation of the nearly 2,000-square-mile Nouabalé-Ndoki reserve, encompassing a remote and unspoiled forest referred to in a *TIME* magazine cover story as "the last Eden." A management plan for the area is also being designed and implemented under a \$2.5-million grant to the Society from USAID. Fay, Amy Vedder, and Matthew Hatchwell are also working closely in the area supported by the Global Environment Facility of the World Bank.

In Cameroon, James Powell completed the initial inventory phase directing the Korup Forest Project and submitted proposals for follow-up research and training efforts. In his own research on forest elephant ecology, Powell achieved a pioneering breakthrough when he radio-collared a forest elephant for the first time. That female's movements are now being monitored on the ground and in the Bronx, where Biotelemetry Studies Unit co-director Fred Koontz plots data transmitted by the Argos satellite.

Surveys in southeastern Cameroon by Karl Strohmayr and Atanga Ekobo yielding the highest elephant density figures in all of Africa are being used to generate interest in creating a new protected area in the region that would link up with existing areas in Congo and the Central African Republic. The potential importance of this proposal can be seen in data compiled by Andrea Turkalo, who has now identified more than 1,400 individual elephants using a single saline clearing in that part of C.A.R.

Two studies of considerable conservation importance were completed in Gabon during the year. Sally Lahm's multiyear survey of hunting in northeastern Gabon has produced some of the most detailed information yet on this critical issue, while Lee White's study of logging impacts on elephants, gorillas, and chimpanzees in the Lope region is also certain to have a major influence on future forest management.

In West Africa, the Tiwai Island project in Sierra Leone was abandoned when Liberian rebels again overran the region, followed by an internal coup d'état. As of this writing, conditions do not permit a return. In Ivory Coast, however, Kouadio Akoi has



returned from an intensive training program in Florida to continue his work on manatee and coastal zone conservation.

Uganda prepared to designate the Kibale Forest as its first forest park, testament to more than two decades of Society commitment to its conservation. The decree coincided with the announcement of a new five-year multi-million dollar agreement between the Society, USAID, and the Ugandan government to build on that tradition of research and conservation. Co-directors Gilbert Isabirye-Basuta and Andrew Johns launched a program of national and international training courses at the field station, assisted by John Kasenene. Multifaceted studies of the rain forest are complemented by an extremely successful community outreach program coordinated by Marijke Steenbeek and a more recently developed ecotourism initiative.

Tourism remains a key component of the Nyungwe Forest Project in Rwanda, under the direction of Liz Williamson, despite ongoing civil war in the northern part of the country. Research and training have also been greatly strengthened through the addition as scientific coordinator of Samuel Kanyamibwa, whose interests extend from avian ecology to human impacts on the forest.

### Mesoamerica and the Caribbean

#### *Path of the Panther.*

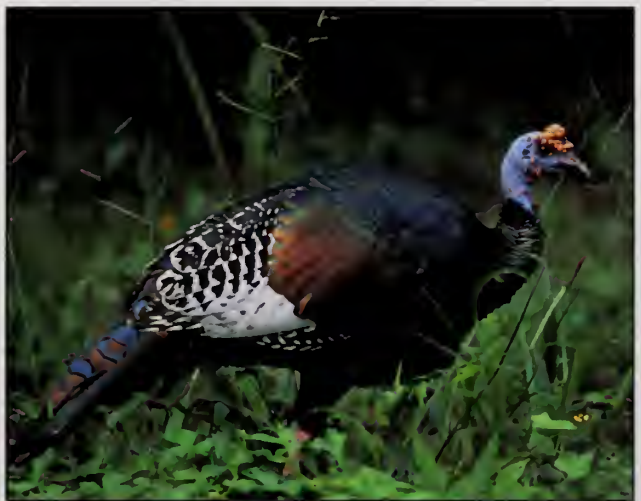
Under Archie Carr III and project coordinator James Barborak, Paseo Pantera is now active in all seven Central American nations. Through basic field studies in key areas, public awareness and educational programs, training for local conservation professionals, and planning at the community and governmental levels, Paseo Pantera is establishing a truly regional approach to saving forest and coastal habitats throughout the isthmus.

This program, run collaboratively with the Caribbean Conservation Corporation (CCC), was strongly endorsed by the Central American Commission for Environment and Development in late May 1992. The Central American Biodiversity Treaty signed a week later in Managua, Nicaragua, calls for a regional, multilateral commitment to the establishment of a Central American biotic corridor. For its scientific work, Paseo Pantera was also awarded a \$400,000 matching grant by USAID's Regional

Office for Central American Projects, over and above the agency's initial \$1.6-million matching grant.

Plans for expanding and linking conservation areas within and across borders advanced dramatically. Archie Carr advised the Nicaraguan government on three major reserves: Bosawas on the Honduran border, Miskito Cays on the northeast coast, and Si-A-Paz on the Costa Rican border. In Honduras, the area between Bosawas and the Rio Platano Biosphere Reserve has officially been given protected reserve status in the wake of Vincent Murphy's documentation of the severely threatened Tawahka Sumu Indians who live there. Murphy also created a highly successful educational campaign on behalf of Rio Platano. James Barborak worked on creating corridors between El Imposible National Park and the Barra de Santiago Mangrove Reserve in El Salvador and between Tortuguero National Park and the Barra Colorado Reserve in Costa Rica.

Buffer zone management, which is so important to maintaining the biotic integrity and continuity of reserve areas, is one of several overarching themes of Paseo Pantera. The third annual workshop on the subject, organized by Jim Barborak, was held at the University of Peace in San José, Costa Rica. Twenty-nine participants from 15 countries were trained in classes and field exercises. Barborak also ran a border parks conference in San José focusing on enhancing and expanding these crucial international efforts. In June, Nina Chambers began a survey of protected areas in Central America that now support buffer zone management.



*Ocellated turkey near Tikal, Guatemala.*

Specific buffer zone projects included Albert Vega's investigation of land-use management on three of the Bay Islands in Honduras, where coral reefs as well as land areas are at risk. Fieldwork was completed for the creation of land-use maps and for a biodiversity survey. A video was also being prepared for use in the upcoming dialogue on conservation and development in the islands.

The Bay Islands are also the site of an important environmental education effort directed by Susan Jacobson. Involved are the publication and distribution of a teachers manual on marine ecology, the review of local school curricula, the establishment of environmental resources centers on three islands, the organization of workshops, and the creation of a bilingual guidebook to the islands.

Ecotourism as an economic resource and a tool of conservation is being studied or implemented in several places, including the great Maya Biosphere Reserve around the Mayan ruins of Tikal in Guatemala. In March 1992, Paseo Pantera backed an ecotourism conference at La Ceiba, Honduras that provided important groundwork for ecotourism councils in that country.

Long-term forest projects in Guatemala and Belize are moving toward a greater degree of protection. Wildlife surveys by Howard Quigley, Milton Cabrera, and Maria Gonzalez in the Petén forest around Tikal are part of planning for the Maya Reserve. Bruce and Carolyn Miller's work in the Maya Mountains of Belize, where unexploited forests cover about one-eighth of the country's area, contributed to the creation of the Chiquibul National Park and the smaller, private Slate Creek Reserve. In Costa Rica, Carlos Guindon has made important strides in determining the value of forest fragments around the Monte Verde Cloud Forest Reserve, which will help in the management of buffer zones.

Belize's other natural treasure, the 150-mile-long barrier reef, was the beneficiary of a \$3-million grant from the Global Environmental Facility of the World Bank for conservation planning. Janet Gibson is working with Jacque Carter in designing the plan. Other coastal projects include Anne and Peter Meylan's study of sea turtles and measures to protect the marine life in Bastimentos Marine National Park in Panama.

## Tropical South America

### *The Bigger Picture.*

As in other regions, Society projects in South American rain forests have become more holistic. Applied conservation research and implementation now more extensively address the needs and habits of people as part of the environmental imperative. The human-habitat-wildlife symbiosis becomes a matter of urgent concern.

Under Márcio Ayres, the 5,000-square-mile Lake Mamirauá Ecological Station in Brazil's flooded Amazonian forests has become a model of comprehensive management since its declaration in 1990. While building an infrastructure to study the ecosystem and its wildlife, to train scientists, and to manage the area, Ayres and his associates are also learning, as part of their conservation planning, how the forest is used as a fishery and agricultural resource. Several investigations of primate ecology are conducted at Brazilian forest sites under Ayres' supervision. During the year he served for a while as director of the parks and protected areas in the Brazilian Agency for the Environment and was named to the Brazilian Academy of Sciences (IBAHA).

Comprehensive action on behalf of conservation



*Releasing Orinoco crocodiles near the Capanaparo River, Venezuela.*

in Venezuela is the purpose of an agreement signed by the Society, the National Parks Institute of Venezuela (INPARQUES), and the private organization EcoNatura to strengthen the country's national parks. There are now several multifaceted projects in place.

One of the flagships is Henri Pittier National Park, where Alejandro Grajal has set up a program of field research, rural education, training, and monitoring. Interpretive trails have been established and an interpretive center is underway. Through agreements





*With INPARQUES and Econatura, the Society monitors Orinoco crocodiles and other wildlife in Venezuela's parks.*

with local governments and Indian communities, Isaac Goldstein's project at Rio Nichare in Caura Forest Reserve is monitoring water quality, alternative forest uses, fruit nutrients, and forestry plans as well as parrot and spider monkey populations. And John Thorbjarnarson's Orinoco crocodile project continues to aid the recovery of that species. About 450 hatchlings are now being reared at Hato Masaguaral, 321 have been released in the wild over the past three years, and populations are being studied at the newly declared Santos Luzardo National Park. Thorbjarnarson also conducted river turtle surveys and began radio-tracking anacondas, with support from the Society, CITES, and PROFAUNA, the government wildlife agency.

Headquarters were established in Quito, Ecuador for the field research and training arm of Sustainable Use of Biological Resources (SUBIR), headed by Jody Stallings. This major collaborative effort involving CARE, The Nature Conservancy, and the Society aims to halt degradation in three protected areas—Cotacachi-Cayapas, Cayambe-Coca, and Yasuní—and focuses on community use of buffer zones. In the cloud forests of Podocarpus National Park and other

areas, Luis Suárez and Patricio Mena completed their three-year program of wildlife surveys, professional conservation training, and public education. The rapid decline of mountain tapirs in Ecuador's Sangay National Park due to hunting and cattle ranching is being addressed by Craig Downer. His surveys and advocacy on behalf of this little-known species stretch into Colombia and Venezuela.

Ungulates—namely tapirs, white-lipped peccaries, and deer—are being studied in Bolivia's Noel Kempff Mercado National Park, and urgently needed training for Bolivian conservation biologists has begun. In addition, project director Andrew Taber jointly developed a proposal with the Fundación Amigos de la Naturaleza (FAN) to study the conservation needs and potential sustainable use of the Rios Blanco y Negro Wildlife Reserve, where the largest untouched lowland tropical moist forest in Bolivia is in imminent danger of logging.

In Peru, Charles Munn signed a groundbreaking agreement with the Native Community in Manu Biosphere Reserve to protect macaws and provide information about macaw locations. A conference on the future of Manu adopted a Society plan for the

park's management, which involves the appointment of a new board of directors. Fieldwork continued on macaws in Manu and Tambopata, Peru, and in the Blanquillo Conservation Project in Brazil, where hyacinth macaws are being studied by Carlos Yamashita.

In four years of the Strengthening Manpower program, more than 200 young professionals have participated in conservation courses in Venezuela, Peru, Colombia, and Ecuador, an additional 250 have received bibliographic and other materials, and 77 student projects have been funded by the Jessie Smith Noyes Foundation. Founded by Stuart Strahl and now directed by Maria Elfi Chaves of Colombia, the program has become a principal focus for Society conservation efforts in these countries.

### **Temperate South America**

#### *Bi-coastal Conservation.*

A master conservation plan for the Patagonia's coastal zone in Argentina was approved in proposal form for a grant through the Development Plan as a Global Environmental Facility (GEF) project. Designed by William Conway, with Guillermo Harris and Claudio Campagna, the Patagonian Coastal Zone Management Plan will be developed over a three-year period in collaboration with federal and provincial Argentinian government agencies and environmental groups. Fundación Patagonia Natural (FPN), of which Harris is president, will be the Society's partner in this highly experimental project. It will include programs for field research and monitoring, for establishing planning mechanisms and activities, strengthening institutions, developing human resources, and examining policies. Already in place, of course, are several successful long-term Society projects along the coast.

FPN itself had an active year, with new programs in education and confrontations on issues. Pressures by tour agencies to open Punta Leon to tourists were opposed, and the reserve remains closed for now. When an oil spill at sea killed more than 17,000 penguins, FPN led the effort to determine the extent of damages, call for better controls, and identify the responsible party.

At Punta Tombo, where Dee Boersma has conducted research for eleven years, the effect of the spill was devastating on the Magellanic penguin population, and a later violent storm played havoc with

chicks in their nests. These kinds of pressures reflect the need for stronger pollution laws and the creation of a marine park around the Punta Tombo Reserve. Boersma has now documented an alarming 28 percent decline in Tombo's penguin population since 1987.

Campagna's work at Punta Norte on the behavior and ecology of sea lions and elephant seals was complemented by additional research on killer whales as predators of the pinniped colonies. In January he was appointed director, *pro tem*, of Centro Nacional Patagonica, where he heads a staff of 30 scientists concerned with the conservation and development of Chubut Province.

On South America's opposite coast, Patricia Majluf carries on her ten-year project to protect wildlife at Punta San Juan. Fur seals were studied in relationship to habitat reduction, which causes higher mortality rates due to overcrowding, to the severe 1991-92 El Niño, which seems to have had some beneficial effect, and to the activities of local fishing communities, which have become increasingly cooperative with conservation efforts.

Plans were underway to establish Punta San Juan itself as research institute, which will improve protection for 50 percent of Peru's pinniped population and 75 percent of its Humboldt penguins. Under an agreement to be signed, Pesca-Peru, the government agency in charge of Punta San Juan, would provide maintenance and guards, the Society would conduct field research and training, and Universidad Cayetano Heredia, where Majluf is an associate researcher, would offer academic support and tax exemption for international donations. Professionals needed for such efforts might have attended workshops and a conservation biology symposium organized by Majluf for the August 1991 Tenth National Congress of Biology in Lima, which drew an enormous response from young conservationists and offered much hope for the future.

The nesting and feeding of flamingos continued to be recorded at the recently established Flamingo Conservation Center in Chile, which serves as a focus for regional efforts to preserve three species of flamingos that range over a territory of 120,000 square miles in the Andes of Peru, Bolivia, Argentina, and Chile. However, the Chilean population of James, Andean, and Chilean flamingos has dramatically declined since 1989. Although it is believed that the majority of the mysterious altiplano birds have moved to remote lakes



in Bolivia, confirmation is not yet available. Chile's flamingo population dropped from 75,000 to 7,500.

### Tropical Asia

#### *The Great Island Forests.*

Through ten years of intensive involvement, initiated by Ornithology Chairman Donald Bruning, the Society has helped foster a conservation effort in Papua New Guinea to save vast tracts of tropical forest before they can be aggressively exploited. Under Mary Pearl and Bruce Beehler, completing his first year as field research coordinator, this has become one of the jewels in the Society's Asian program.

Fieldwork to develop protected areas and management plans was begun by Beehler, leading a team of nine students and volunteers from Papua New Guinea and North America in the remote lowland rain forest of the Lakekamu Basin, and continued by other scientists in the montane rain forest of Crater Mountain. Beehler completed an analysis of the bird and mammal fauna of the country and, in the course of his work, reported on the first poisonous (to eat) bird known to science. At Varirata National Park, Eleanor Brown and Michael Hopkins explored bird-plant relationships while training students, supervising projects, and developing conservation and management proposals for the UN's Global Environmental Facility and other agencies. Andrew Mack and Debra Wright worked on cassowary ecology and a management plan for Crater Mountain Wildlife Management Area.

Several key events helped the overall picture in Papua New Guinea. A seven-day workshop, organized in PNG by Pearl and Beehler along with Ambassador Meg Taylor and ornithologist Allen Allison, assessed the country's conservation needs and produced a 400-page report that will serve the development of strategies by the World Bank, the UN Development Programme, and other international agencies. With a grant from the Liz Claiborne-Art Ortenberg Foundation, the Research and Conservation Foundation of Papua New Guinea named as its first director Karol Kisokau, former head of the Department of Environment and Conservation. And a grant from the John D. and Catherine T. MacArthur Foundation funded the development of a professional conservation field school, linked both to the national university and the Department of Environment and Conservation.

MacArthur also funded the Society's work in China with the Kunming Institute of Zoology to conduct surveys throughout Yunnan Province, to provide training for Yunnan Forest Department guards, and to design, with consultation by Associate Director of Exhibition and Graphic Arts Charles Beier, Kunming's new natural history museum as an educational tool for conservation. Under project coordinator William Bleisch, the Society has set up a conservation database at Kunming, sponsored several surveys and studies in the province, and established the Young Scientists Research Fund to encourage new projects.



Charles Munn and leader of the Native Community of Tayakome.

### Parrot Protection.

For the first time ever in the Manu region of southeastern Peru, the Society has negotiated an agreement with people living in the forest to help save endangered parrots. Working with the International Division's Charles Munn, the Native Community of Tayakome has promised not to kill macaws and Amazon parrots and to provide vital information on the forest concerning the birds' behavior and nesting habits.

In return, the Society has agreed to pay the Community in cash or goods. For the first year they have asked to be supplied a shortwave transmitter, which will allow them to communicate with the outside world, of particular use during medical emergencies.

Under the agreement the Community will refrain from hunting or capturing Manu's host of colorful parrots, including the *kimaro* (scarlet macaw), the *yunka* (red-and-green macaw), the *kitieri* (blue-and-yellow macaw), the *sabeto* (chestnut-fronted macaw), the *parapara* (red-bellied macaw), the *meganto* (military macaw), the *eroti* (yellow-crowned parrot), and the *tointi* (orange-cheeked parrot).

Work under Elizabeth Bennett in the forests of Malaysian Borneo expanded with Michael Meredith's study of the effects of land use on biodiversity at the proposed Batang Ai and Lanjak Entimau protected areas and Charles Francis's survey of bird population densities in lowland rain forests. Ramesh Boonratana continued his efforts on behalf of the proboscis monkey and Zainuddin Dahaban studied the impact of selective logging. Bennett's extensive survey of wildlife in Sarawak resulted in detailed conservation recommendations to the state government. There was also some success in protecting the mangrove forests of Sarawak when the proposal to flush fresh water into the forests was withdrawn.

Field training programs were particularly active. In Sabah, Alan Rabinowitz worked with the wildlife department to train staff and form a research and monitoring unit. He and Bennett led a formal training course for mid-level managers, then moved on to Sarawak, where members of the forest department participated enthusiastically. Courses were also conducted in Taiwan.

Training was at the core of Carel van Schaik's work in the northern forests of Sumatra, Indonesia. Groups he has trained now produce their own survey reports on forest vertebrates from sites in Gunung Leuser National Park. Margaret Kinnaid's and Timothy O'Brien's work in the lowland Sulawesi forests concerns the effects of disturbances on fruit-eating birds and mammals and the trees on which they feed.

Indonesia's new minister of forestry, Hajrul Harahap, visited the U.S. in September to present the new Tropical Forestry Action Plan for his country. The Indonesian government asked the Society to host a meeting between Harahap's delegation and representatives of American conservation organizations. This was the first time that forestry officials discussed environmental concerns with conservationists.

The projects of Thai biologist Sompoad Srikosamatara in Laos included a training course for wildlife officials on censusing elephants. He also examined, with Boun-Oum Siripholdej of the Normal University in Vientiane, the commercial wildlife trade between Laos and Thailand. This analysis exposed a large pangolin tannery and trade in horns, antlers, and wildlife meat around Vientiane. Recommendations to close down these illegal operations represent the begin-

ning of citizens' conservation activism in that country.

In India, Ullas Karanth was forced to suspend his field research in Nagarhole National Park. In retaliation for the accidental death of a poacher on park grounds, some local villagers set fire to parts of the park, burning down its headquarters, including Karanth's research hut and vehicle. He continues to work on building support for conservation efforts and on designing a national tiger conservation strategy.

## Temperate Asia

### *Seasons in the Mountains.*

After its first full year of field research, the joint Chinese-American Guizhou Golden Monkey Project, coordinated by William Bleisch, provided seasonal data on the ecology and behavior of this endangered primate, including the impact of an unusually harsh winter. Studies of the unique flora of the Fan-Jing Chan Reserve, to which the species is now confined, will help identify food resources that are critical to the animals at particular times of the year.

Director for Science George Schaller conducted seasonal surveys of wildlife in various areas of the vast Chang Tang Reserve on the Tibetan Plateau, and followed the migration of Tibetan antelope in May and June 1992. Efforts to stop the illegal hunting of antelope, wild yak, and other animals, particularly in the southern grasslands of the reserve, were expanded by the Tibet Forest Bureau, to which the Society donated two vehicles, ten binoculars, and funds for the creation of posters, brochures, road signs, and other educational materials.

In Mongolia, Schaller launched studies, with Mongolian researchers, of the Gobi brown bear, snow leopards, and wild camels. He met with the minister of the environment to recommend a strategy for expanding and managing a countrywide system of protected areas.

## The Society's International Field Projects

### African Savannas

1. African Elephant Action Plan. David Western.
2. Rhino Rescue Fund. David Western.
3. Coral Reef Conservation. Tim McClanahan.
4. Ethiopian Wildlife Conservation Organization (EWCO) Support, Ethiopia. Jesse C. Hillman.



5. Simien Jackal Ecology, Ethiopia. Claudio Sillero and Maria Gottelli.
6. Conservation Education, Ethiopia. John Osborne.
7. Awash National Park Management, Ethiopia. Catherine Schloeder and Michael Jacobs.
8. East Africa Coordination and Administration, Kenya. David Western.
9. Amboseli National Park, Kenya. David Western.
10. Kitengela Corridor Ecological Design, Kenya. Helen Gichohi.
11. Nairobi National Park Management, Kenya. David Western and Helen Gichohi.
12. Elephants Outside of Parks, Kenya. John Waithaka.
13. Nakuru National Park Management, Kenya. Christopher Gakahu and Evans Mwangi.
14. Elephant Genetics and Ivory Trade, Kenya. Nicholas Georgiadis.
15. Impact of Tourism in Masai Mara, Kenya. Christopher Gakahu.
16. Ecological Impact of Abandoned Maasai Settlements, Kenya. Andrew Muchiru.
17. Conservation of Desert-dwelling Black Rhinos, Namibia. Joel Berger.
18. Conservation of the Black-faced Impala, Namibia. Wendy Green and Aron Rothstein.
19. Tanzanian Operations and Jackal Ecology, Tanzania. Patricia Moehlman.
20. Ecological Research and Training, Tanzania. Conservator of the Ngorongoro Crater Area Authority, Serengeti Wildlife Research Institute, and Patricia Moehlman.
21. Environmental Monitoring and Training in National Parks, Tanzania. Director General of Tanzania National Parks, Serengeti Wildlife Research Institute, and Patricia Moehlman.
22. Training and Education, Tanzania. Patricia Moehlman.
23. Poaching Impact on Wildebeest, Tanzania. Simon Mduma.
24. Conservation of Pancake Tortoise, Tanzania. Donald Moll, Michael Klemens, Kim Howell, and Amie Brautigan.
25. Conservation and Human Ecology, Tanzania. Kathleen Galvin and James Ellis.
26. Wild Dog Conservation, Zimbabwe. Joshua Ginsberg and Claire Davies.

#### African Forests

27. Forest Elephant and Ape Surveys and Management Plans. Richard Barnes.
28. Community Surveys. William Weber.
29. Biological Inventory and Training, The Wildlife Conservation Society/USAID, Cameroon. James

- Powell, Maureen Durkin, Evelyne Laurent, and Paul Rodewald.
30. Wildlife Surveys, The Wildlife Conservation Society/EC, Cameroon. Karl Stromayer and Atanga Ekobo.
31. Ecology and Conservation of Small Carnivores, Central African Republic. Justina Ray.
32. Forest Elephant Monitoring and Genetics, Central African Republic. Andrea Turkalo.
33. Congo Forest Conservation, The Wildlife Conservation Society/USAID, Congo. Michael Fay, Matthew Hatchwell, Richard Ruggiero, and Marcellin Agnagna.
34. Manatees, Coastal Mangrove Conservation, and Education, Ivory Coast. Kouadio Akoï and James Powell.
35. Butterflies and Biodiversity Indicators for Conservation, Malagasy Republic. Claire Kremen and Vincent Razafimahatratra.
36. Nyungwe Forest Project, The Wildlife Conservation Society/USAID, Rwanda. Liz Williamson and Samuel Kanyambwa.
37. Rain Forest Conservation and Education, Sierra Leone. John Oates and Emmanuel Alieu.
38. Primate Use of Forest Habitats, Sierra Leone. Cheryl Fimbel.
39. Kibale Forest Project, The Wildlife Conservation Society/USAID, Uganda. Andrew Johns, Isabirye Basuta, and Marijke Steenbeek.
40. Chimpanzee Ecology and Behavior, Uganda. Isabirye Basuta.
41. Wild Coffee Ecology and Economic Potential, Uganda. John Kasenene.
42. Okapi Ecology and Conservation, Zaire. John and Terese Hart.
43. Duiker Ecology, Zaire. John Hart.
44. Training and Monitoring, The Wildlife Conservation Society/USAID, Zaire. John and Terese Hart.
45. Comparative Forest Dynamics, Zaire. Terese Hart.
46. Wildlife Surveys, Zaire. Claude Sikubwabo.
47. Gorilla Surveys, Zaire. Jefferson Hall.

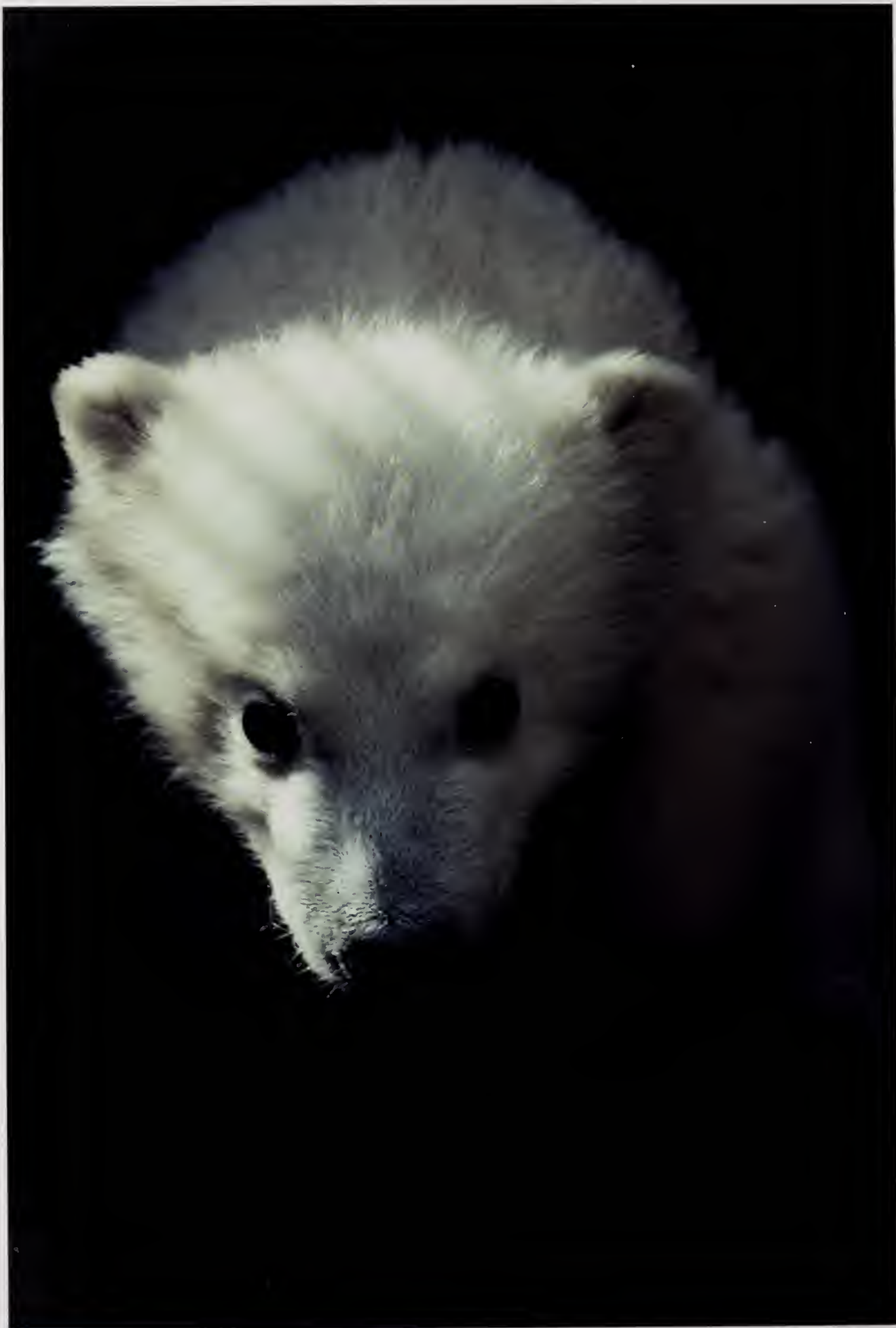
#### Tropical South America

48. Ungulate Research and Training Program, Bolivia. Andrew Taber and Fundación Amigos de la Naturaleza (FAN).
49. Cracid Surveys, Bolivia. Guy Cox.
50. Siriono Indian Hunting Practices, Bolivia. Wendy Townsend.
51. Abundance, Distribution, and Habitat Use of Crocodilians in Beni, Bolivia. Luis F. Pacheco.
52. Flooded Forest Conservation, Central Amazon, The Wildlife Conservation Society/WWF, Brazil. José Márcio Ayres and Peter Polshak.

53. Black-fronted Piping Guan, Brazil. Sandra Paccagnella and Pedro Scherer.
  54. Hyacinth Macaws, Brazil. Carlos Yamashita and Charles Munn.
  55. White-lipped Peccaries, Brazil. José Fragoso.
  56. Biogeography, Western Amazon, Brazil. Jay Malcolm.
  57. Mammalian Conservation in the Pantanal, Brazil. Laurenz Pinder.
  58. Alto Quindío Avifauna Conservation, Colombia. Luis Renjifo and Fundación Herencia Verde.
  59. Protected Area Conservation and Indigenous Communities, Colombia. Heidi Rubio and Fundación Natura.
  60. Cloud Forest Spiders, Colombia. Carlos Valderrama.
  61. Regional Training Coordination, Colombia. Maria Elfi Chaves.
  62. Ecology of the Yellow-spotted Amazonian River Turtle, Colombia. Vivian Patricia Paez and Brian C. Bock.
  63. Bird Frugivores in a Tropical Cloud Forest, Colombia. Carla Restrepo.
  64. National Park and Cloud Forest Conservation, The Wildlife Conservation Society/USAID, Ecuador. Luis Suárez, Patricio Mena, and EcoCiencia.
  65. Curassow Population Analysis, Ecuador. Arlyne Johnson.
  66. Curassow Surveys and Human Use, Ecuador. Ruth Garces.
  67. Mountain Tapir, Ecuador. Craig Downer, Armando Castellanos, and Jaime Cevallos.
  68. Sustainable Use of Biological Resources, The Wildlife Conservation Society/CARE/TNC, Ecuador. Stuart Strahl.
  69. Chaco Peccary Conservation, Paraguay. Nora Neris de Colman.
  70. Amazon Macaw Ecology and Conservation, Peru. Charles Munn.
  71. Tambopata Reserve Planning, Peru. Charles Munn and ACSS.
  72. Brazil Nut Trees, Peru. Enrique Ortiz.
  73. Pollination by Bats and Birds, Peru. Catherine Sahley.
  74. Rio Nichare Rain-forest Conservation and Ethnobiology, Venezuela. Isaac Goldstein, Stuart Strahl, and EcoNatura.
  75. Cracids and Wildlife Trade, Venezuela. Stuart Strahl.
  76. Henri Pittier National Park Support, Venezuela. Amigos del Parque Nacional Henri Pittier and Alejandro Grajal.
  77. Student Conservation Program, Venezuela. Eco-Natura.
  78. Parrot Trade and Conservation, Venezuela. Philip Desenne and EcoNatura.
  79. National Park Management and Training, The Wildlife Conservation Society/EC, Venezuela. National Parks Institute of Venezuela (INPARQUES) and EcoNatura.
  80. Orinoco Crocodile, Venezuela. John Thorbjarnarson and FUDENA.
  81. Side-necked Turtle, Venezuela. Jorge Perez and INPARQUES.
  82. Timber Exploitation and Wildlife Populations, Venezuela. José Ochoa and Audubon de Venezuela.
  83. Hunter Education around National Parks, Venezuela. José Lorenzo Silva.
  84. Private Landowner Conservation Initiative, Venezuela. Gilbert Rios and ASOMUSEO.
  85. Margarita Parrot Ecology and Conservation, Venezuela. Kirsten Silvius, Patricia Marquez, EcoNatura, and MARNR.
  86. Spider Monkey Ecology, Venezuela. Hernán Castellanos.
  87. Biocide Use in the Llanos, Venezuela. Gianfranco Basili and Stanley Temple.
  88. Bird Conservation in Managed Tropical Forests, Venezuela. Douglas Mason.
  89. Crocodiles: Breeding, Reintroduction, Ecology, and Survey, Venezuela. Andres Seijas.
- Temperate South America**
90. Province of Chubut Conservation, Argentina. William Conway.
  91. Magellanic Penguin Research, Argentina. P. Dee Boersma.
  92. Sea Lions and Coastal Zone Management, Argentina. Claudio Campagna.
  93. Valdes Station Management, Argentina. Graham Harris.
  94. Punta Leon Seabirds and Mammals, Argentina. Graham Harris, Claudio Campagna, and Pablo Yorio.
  95. Oiled Penguin Research, Argentina. EcoBios.
  96. Flamingos in Northwest Argentina. Enrique Bucher and Terence Boyle.
  97. Huemul Status and Conservation, Argentina. Werner and Joanne Flueck.
  98. Flamingo Center, Chile. Corporación Nacional Forestal (CONAF).
  99. Humboldt Penguin Conservation, Chile. Hector Oyarzo and CONAF.
  100. Protection of Punta San Juan Fur Seals, Peru. Patricia Majluf.
  101. Fisheries and Marine Mammal Conflicts, Peru. Milena Arias-Schreiber.
  102. Wildlife Surveys and Monitoring, Peru. Patricia Majluf.
- Mesoamerica and the Caribbean Basin**
103. Paseo Pantera Cooperative Program, The Wildlife Conservation Society/CCC/USAID. Archie Carr III, James Barborak, and Kathleen Williams.




104. Belize Barrier Reef Management, Belize. Janet Gibson and Jacque Carter.
  105. Tropical Forest Reserve Planning, Belize. Bruce and Carolyn Miller.
  106. Nesting Ecology, Food Habits, and Population Survey of Morelet's Crocodile, Belize. Richard R. Montanucci and Steven G. Platt.
  107. Tarpon Studies, Costa Rica. Didier Chacon and William McLarney.
  108. Park Corridor Planning, Costa Rica. James Barborak.
  109. Forest Fragments Maintenance and Biodiversity, Costa Rica. Carlos Guindon.
  110. Conservation Genetics of the Green Sea Turtle, Costa Rica. Tigerin Peare and Patricia Rabenold.
  111. Ecological Restoration, The Wildlife Conservation Society/USAID, El Salvador. AMAR and James Barborak.
  112. Greater Petén Conservation Planning, Guatemala. Howard Quigley, Milton Cabrera, and Maria José Gonzalez.
  113. Coral Reef and Marine System Conservation, The Wildlife Conservation Society/USAID, Honduras. Susan Jacobson and Albert Vega.
  114. Conservation Area Documentation, Honduras. Vincent Murphy.
  115. Calakmul Biosphere Reserve, Yucatan, Mexico. Joann Andrews.
  116. Guan Conservation, Mexico. Fernando Gonzalez-Garcia and Francisco Javier Jimenez-Gonzalez.
  117. Lacondon Forest Conservation, Mexico. Eduardo Inigo and Rodrigo Medellin.
  118. Coral Reef Ecology and Management, Mexico. Daniel Torruco Gomez.
  119. Protected Areas Initiative, Nicaragua. Archie Carr III.
  120. Marine Turtle Ecology, Panama. Anne and Peter Meylan.
  121. Bastimentos Marine National Park, Mexico. ANCON.
  122. Wildlife Use and Park Management, Panama. Julieta Samudio.
- Tropical Asia**
123. Conservation Training, Asia Staff.
  124. Gibbon Conservation in Yunnan, China. Chen Nan.
  125. Reserve Management Training Program, China. Ji Weizhi.
  126. Program Integration, China. William Bleisch.
  127. Conservation Database, China. Chen Nan.
  128. Wildlife Surveys and Monitoring, China. Zhao Qikun, Wang Yingsian, and Han Lianxian.
  129. Conservation Education, China. Shi Liming, Charles Beier, and Ji Weizhi.
  130. Forest Conservation Policies, India. Balachander Ganesan.
  131. Tigers and Other Carnivores, Nagarhole National Park, India. Ullas Karanth.
  132. Ecology of Woodpeckers, Kerala, India. V. Santharam.
  133. Tropical Ecology of Northern Sulawesi, Indonesia. Margaret Kinnaird and Tim O'Brien.
  134. Conservation Training, Sumatra, Indonesia. Carel van Schaik.
  135. Economic Fruits Regeneration, Indonesia. Mary Pearl.
  136. Conservation Biology of the Babirusa in Sulawesi, Indonesia. Lynn Marion Clayton and David Macdonald.
  137. Remnant Trees and Frugivores in Regeneration Burned Forest, Indonesia. Adi Susilo.
  138. Conservation Training for Wildlife Managers, Laos. Sompoad Srikosamatara.
  139. Wildlife Management, Sarawak and Sabah, Malaysia. Elizabeth Bennett.
  140. Training, Sarawak and Sabah, Malaysia. Alan Rabinowitz and Elizabeth Bennett.
  141. Proboscis Monkeys, Sabah, Malaysia. Ramesh Boonratana.
  142. Effects of Logging, Sarawak, Malaysia. Zainuddin Dahaban.
  143. Effects of Forest Land Use on Biodiversity, Sarawak, Malaysia. Michael Meredith.
  144. Conservation Status of Forest Birds, Malaysia. Charles Francis.
  145. Support for the Conservation Foundation of Papua New Guinea. Karol Kisokau, Eleanor Brown, and David Vosseler.
  146. Cassowary Ecology and Forest Conservation, Papua New Guinea. Andrew Mack and Debra Wright.
  147. Montane Cuscus Conservation, Papua New Guinea. Steven Austad.
  148. Wildlife Surveys and Forest Ecology, Papua New Guinea. Bruce Beehler.
  149. Conservation Biology Training, Papua New Guinea. Eleanor Brown and Michael Hopkins.
  150. Crater Mountain Rural Development, Papua New Guinea. David Gillison.
  151. Distribution and Conservation of Hoofed Mammals, Thailand. Sompoad Srikosamatara.
  152. Conservation Training, Thailand. Sompoad Srikosamatara.
  153. Tiger Census, Thailand. Alan Rabinowitz.
- Temperate Asia**
154. Wildlife Surveys and Reserve Planning, China. George Schaller.
  155. Guizhou Golden Monkey Conservation, China. William Bleisch and Xie Jiahua.
  156. Career Development and Conservation Planning, China. William Bleisch.
  157. Wildlife Research and Conservation, Mongolia. George Schaller, A. Tulgat, and G. Amafsanaa.
  158. Training and Conservation Program, Taiwan. Alan Rabinowitz.



*Tundra, polar bear born on November 21, 1991.*



# Environmental Education

 Programs and publications that teach how nature works and raise public awareness concerning local and global conservation issues. Reports on innovative efforts to renew science education and train teachers, to use zoos and aquariums as teaching resources, to serve the schools of metropolitan New York and reach audiences throughout the nation and abroad.

## International Wildlife

### Conservation Park Education

*National Leadership, Local Initiatives.*

The *Habitat Ecology Learning Program (H.E.L.P.)* became the Society's third major national curriculum project in environmental education. *H.E.L.P.*, sponsored by the National Science Foundation, teaches fourth-through sixth-graders about the earth's ecosystems, including rain forests, deciduous forests, wetlands, grasslands, and deserts. Its teaching resources extend beyond the classroom to wildlife parks and nature itself.

*H.E.L.P.* began in summer 1991 with a two-week training course at the Park for thirty teachers from twelve states and education curators from zoos in Arizona, Ohio, and Maryland. During the ensuing school year participants taught what they had learned and drafted lesson plans that were in turn to be used in the 1992 training program. Over four years a master teachers manual will be developed from these plans, and a multifaceted effort will evaluate student results.

Locally, *H.E.L.P.* teachers attended curriculum development sessions at the Park, where they critiqued lesson plans and assessed student progress. Their classroom instruction was supplemented by many trips to the Park, and classes were visited by the *H.E.L.P.* project coordinator and Friends of the Zoo volunteers.

National dissemination of *Pablo Python Looks at Animals*, the Society's wildlife education program for grades K-3, was made possible by a major grant from the National Diffusion Network, a division of the U.S. Department of Education. Under the grant, a program coordinator communicates with state facilitators,

school administrators, and teachers across the country, and special training is provided for teachers planning to implement the project. A brochure and video to send along with sample curriculum materials have already been completed. Nearly completed is a detailed teachers manual that will accompany the kits, and a bilingual parents' handbook, in English and Spanish, will be created during the next academic year. All the materials, as well as the quality of adoptions, will be evaluated throughout.

To date, 27 awareness sessions for *Pablo* have been held nationwide, in New York, New Jersey, Massachusetts, Pennsylvania, Kentucky, Tennessee, West Virginia, and elsewhere. Presentations have been requested for science education conferences in several additional states, including California, Hawaii, Texas, and Montana. The 127 adoptions of *Pablo Python* in New York, Louisiana, and Nebraska are reaching 182 teachers and nearly 6,000 students. A total of 200 adoptions are expected by the end of the program's first year.

The Society's oldest national curriculum, *Project WIZE*, has reached more than 250,000 junior high and high school students in 33 states since 1988. New adopters were added in Guam, Nebraska, Nevada, and Virginia during the year. Eleven *WIZE* training sessions in four states reached 194 new teachers and 20,134 students, and six sessions were hosted by zoos nationwide. Twenty awareness sessions were held in 13 states for over 5,700 participants.

In the area of professional recognition, *Project WIZE* was invited by the New York Academy of Sciences to present a session on science education.

WIZE also received a Certificate of Environmental Achievement from the National Environmental Awards Council and will be listed in the Renew America 1992 Environmental Success Index. A four-year grant from Summer Institutes at the Park will broaden the impact of the program by certifying *Project WIZE* trainers to work with colleagues in their own states.

In another national program, the Society hooked up with the Girl Scouts of the USA for the two-week course in Animal Care and Management. Eighteen teenage girls, most of them interested in pursuing veterinary or wildlife conservation careers, were chosen competitively from as far away as California and New Mexico. In an intensive 66-hour program, the participants learned vertebrate biology, exhibition design, and the basics of animal care from experts on the Park's keeper, health sciences, and design staffs.

Teenagers from the Bronx participated in a new eighteen-session elective course in Wildlife Biology, sponsored by a generous grant from Citibank. Thirty students from fourteen high schools were selected through a highly competitive process to learn about animal behavior, animal health, nutrition, husbandry, conservation, and the role of the modern wildlife park. One academic credit and an entirely new experi-

ence were offered to students who have little access to science education resources. Attendance was near 100 percent, and the program was a model of cooperation with the assistant principals, guidance counselors, and officials at the Bronx Bureau of High Schools.

A Bronx collaboration between the Society and Community School District #8 was part of the *Corridor Initiative*, an innovative partnership involving the Fund for New York City Public Education, the New York City public schools, and cultural institutions. Using *Pablo Python*, *Windows on Wildlife*, and *Project WIZE*, the Park's Education staff offered programs for grades K-3 (PS 93), 4-6 (Community School 152), and 7-9 (Junior High School 123), with special emphasis on the transitions from one level to the next. Teachers attended orientation workshops, and students made many visits to the Park. Parents were brought into the process through weekend activities and live animal demonstrations conducted by Friends of the Zoo.

At the Park, 42,660 children and adults participated during the fiscal year in school and general audience programs, workshops, and courses. Visiting in organized groups were 410,006 schoolchildren and summer campers. Special classes were offered by Ornithology Chairman Dr. Donald Bruning on pro-

Teachers in H.E.L.P. training learn to use biotelemetry equipment.







Dramatizing hibernation in a forest pond is one of the techniques learned by H.E.L.P. teachers.

recting parrots from the pet trade and by Veterinarian Dr. Bonnie Raphael on birth control in breeding programs. New courses for adults included *Tracking the Elusive Snow Leopard*, about the use of biotelemetry in the field, and *Exploring Africa's Past and Future*, sited at the new Baboon Reserve habitat. The latter was complemented by the publication of a multi-layered kit featuring maps of important fossil finds, a flip-book giving a fast look at hominid evolution, African conservation case studies, profiles of field biologists, and fascinating population data. *If I Ran the Zoo*, *Mission Dentition*, and *Egg-Citement* were favorites among new children's offerings.

For visitors wishing to explore the Park on their own, two new self-guided tours were published: *World of Reptiles*, detailing the recently renovated Reptile House, and *Wet n' Wild*, focusing on otters, penguins, and pelicans.

Friends of the Zoo (FOZ), the department's growing cadre of 250 volunteers, provided free guided tours to more than 19,000 schoolchildren and adults during the year. Stationed at African Market, Wild Asia Plaza, the Children's Zoo, and Zoo Center, FOZ docents served more than 70,000 hours. They also answered nearly 200 letters each week from schoolchildren. The hospital outreach program served 2,500

children and adults outside the Park. In two important animal studies, FOZ members collected data on the nesting behavior of the scarlet ibis colony for the Bird Department and surveyed MouseHouse animals and their use of exhibition space for the Mammal Department.

Two Bennett's wallaby babies entertained the 460,951 visitors to the Children's Zoo. At Wild Asia Plaza, 65,728 visitors enjoyed rides on the Park's four dromedary camels, and about 300,000 visitors attended the five daily educational live animal demonstrations held at the theater during the season.

### Aquarium Education

#### *Year of the Whale.*

The birth of two Beluga whales in August was a focal event for educational programming. More than 130,000 visitors to the Aquarium enjoyed interpretive talks given by volunteers and instructors at the whale exhibit during the babies' first month of life, and about 3,000 people, ages three to 100-plus, participated in a variety of classes on whales. For 80 days, 185 trained volunteers worked five shifts per day, keeping a 24-hour watch on the baby whales, recording nursing times and behaviors.

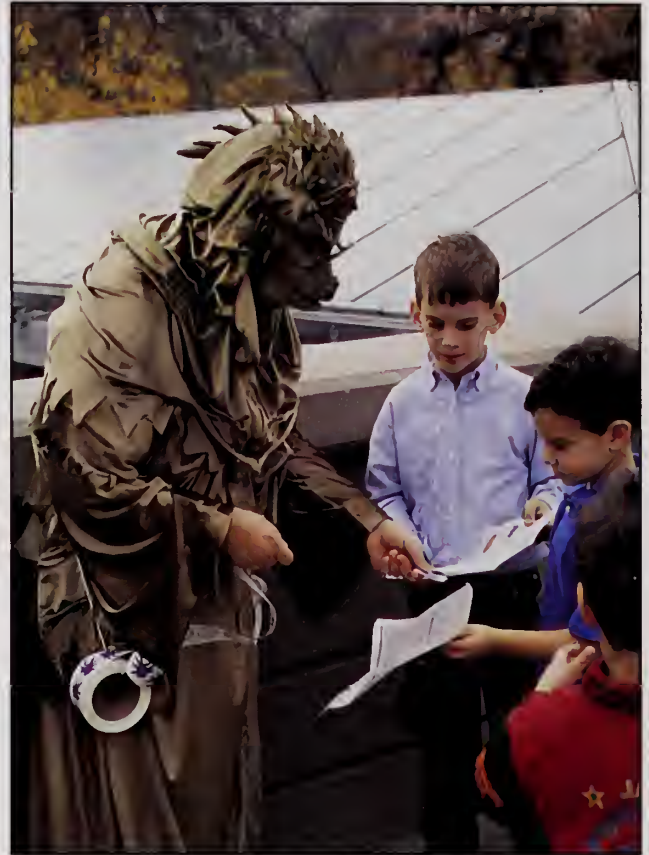
Funds from The Dyson Foundation allowed the

Education Department to establish a partnership with all third-grade children and their teachers in District #27 in Queens. Staff development workshops introduced the teachers to the realm of aquatic invertebrates. After several months of pre-trip preparation, the children arrived at the Aquarium for "Super Science Morning." Programs and activities such as gyotaku (squid printing), animal handling, songs about invertebrates, and "conservation conversations" reinforced and complemented the children's classwork. The culminating event, a theater piece performed by Aquarium instructors, was hailed by district teachers as "innovative and creative science education resulting in a new and real concern for the environment." Additional grant funds expanded the department's peer teaching program to include an additional junior high school and eight elementary schools in Queens.

Every other New York City school district also participated in Aquarium education programming. About 45,000 schoolchildren were enrolled in programs and 144,132 visited Aquarium exhibits in 3,826 school groups. Helping the department were 139 volunteers, who worked 6,000 hours. Eighteen high school interns assisted in animal and training programs as well as education.

The department extended Aquarium outreach through participation in several metropolitan area events and festivals. At PET EXPO, Aquarium educators, curators, and keepers brought messages of conservation and responsible pet ownership to a large Long Island audience of more than 10,000 adults and children. Another 25,000 people were reached at the Shad Festival, Welcome Back to Brooklyn, Atlantic Antics, Beneath the Sea Dive Expo, and 4 Chase Manhattan Family Days.

The ecology of coral reefs and the impact of human intervention on these delicate, complex life systems were subjects of Curator Ernie Ernst's presentation to commercial fishermen, dive operators, hotel administrators, and tourist officials in Curaçao. Requested to speak by the natural resources and tourism departments during a CEDAM-sponsored trip, Dr. Ernst suggested diving and fishing techniques that would have a minimal impact on the reef system. Participants immediately formed a collective to productively manage reef resources of the island.



*Halloween brings out an extinct Jamaican iguana at the Central Park Center.*

### **Central Park Wildlife Conservation Education *Holiday Reminders.***

An unprecedented number of people were reached by wildlife educators and volunteers at several holiday events. Over Halloween weekend, visitors were invited to "Go Batty" in an event that included mask-making, face-painting, and, on the more serious side, a "graveyard" of extinct species. Volunteer ZooGuides dressed as the Ghosts of Species Past helped sensitize visitors to the tragedy of animal extinctions.

In December, the Winter Holiday Festival featured such activities as endangered species ornament-making and an educational scavenger hunt. Guided by a series of clues in a wildlife "passport," visitors learned about various species and environments at several conservation stations. Other special events included a Spring Break week in May and the Environmental Fun Fair at the World Financial Center, in which all three Society education departments participated.

More than 4,000 adults, children, and students participated in classes, and an additional 60,000 stu-



dents and their teachers visited the Center in organized school groups. Classes such as Zoo Chef, Gardening in the Rain Forest, and How the Zoo Works gave families and adults an opportunity to see behind the scenes. Younger visitors explored the wildlife world through such courses as Mammal Mania, Talking About Turtles, and Watching Animals.

### **Wildlife Conservation Magazine**

#### *Engaging the Issues.*

Since its name change in January 1990, the magazine has evolved into an important source of conservation news and commentary, with investigative reports on the global wildlife crisis at its core. Gradually the news section up front has been subsumed under the title "Conservation Hotline," with expanded reports on endangered species, threats to the environment, new parks and reserves, legislation, and other conservation news. Both design and subject matter reflect the greater urgency of feature articles.

In July/August 1991, *Wildlife Conservation* carried stories about threats to the koala's survival in Australia and the comeback of the bald eagle and black-footed ferret in the U.S. September/October focused on wildlife of Botswana's Kalahari Desert and featured a cautionary account by George Nobbe on economic threats to the people and wildlife of Alaska's Kodiak Island. November/December brought reports by Jon Luoma on the continuing effects of DDT on peregrine falcons and by WCI field scientist Alan Rabinowitz on the fight to save the tiger in Thailand. In January/February Edward Ricciuti followed efforts to expose smugglers of rhino horns and weapons in South Africa, and in March/April he reported from Montenegro in the former Yugoslavia on successful conservation steps in that war-torn area of the world. That issue also carried Luoma's hard-hitting piece on the battle to save Alaska's Arctic National Wildlife Refuge from further oil exploitation. Two incisive articles in May/June, by Chris Bright and Eddie Nickens, dealt with the growing decimation of U.S. forests under the federal government's nose.

For the first time, *Wildlife Conservation* was a finalist in the reporting category of the prestigious National Magazine Awards. John G. Mitchell's important article, "You Call This a Refuge," published in the March/April 1991 issue, was cited for its reporting on

the abuse of national refuges by industry and individuals and their neglect by government agencies. The awards committee called the article a "seminal investigation" of a problem that has now drawn national attention.

Since January 1992, the magazine's editorial direction has been in the capable hands of new editor-in-chief Joan Downs, a former staff writer at *Time* magazine, a founding editor of Condé Nast's *Self* magazine, and founding editor of *Your Family*, published by Family Media. Also new to the staff is Julie Larsen, who, as art director, took charge of an almost totally in-house design and type capability.



*Horseshoe crab instructor helps visitors at the Environmental Fun Fair.*

### **Joining Forces.**

On the weekend of March 7 and 8, 1992, education staff from the Bronx, Central Park, and the Aquarium joined in presenting the Environmental Fun Fair at the World Financial Center in Manhattan. New ideas on recycling, consumer habits, and opportunities for personal commitment to conservation were featured, along with performances of the *Happy Mother Nature Show* by a group of children from Colombia.

Aquarium instructors dressed as horseshoe crabs, pink squid, marine turtles, and other creatures roamed the Wintergarden Gallery event, where 8,000 children and adults enjoyed the festivities. More than 100 Society educators and volunteers presented slide shows and talks, served as on-the-spot guides, and staffed tables with fish-printing, paper-bag puppet-making, face-painting, and other activities. Mr. R.E. Cycle, the Aquarium's mechanical recycling man, was on hand to pitch visitors' soda cans into the recycling bin.

# Books, Articles, and Papers by Society Staff and Associates

- Amato, G. 1992. Molecular approaches to the conservation of endangered species (invited seminar). Program for Excellence in Science Education, U.S. Department of Armed Services. University of Connecticut, Storrs.
- \_\_\_\_\_. 1991. Polymerase chain reaction: Theory and practice. PCR as a tool in conservation genetics. Sponsored by Perkin-Elmer (invited seminar presentation). University of Connecticut Biotechnology Center, University of Connecticut, Storrs.
- \_\_\_\_\_. 1992. Taxonomy and conservation (invited seminar). School of Forestry and Environmental Studies, New Haven, CT.
- \_\_\_\_\_, J. Gatesy, and M. Norell. 1992. Higher level relationships of crocodylians based on DNA sequence data. Joint meeting American Society of Naturalists, The Society of Systematic Biologists and Society for the Study of Evolution, University of California, Berkeley.
- \_\_\_\_\_, and O. Ryder. 1992. Presentation and report on subspecific status of rhinoceros. Captive Breeding Specialist Group Global Action Plan Workshop.
- \_\_\_\_\_, and C. Sheppard. 1992. Report on DNA sequence similarity of *Buceros bicornis bicornis* and *Buceros bicornis homrai*. Captive Breeding Specialist Group Annual Meeting, Singapore.
- \_\_\_\_\_, D. Wharton, J. Gatesy, and R. DeSalle. 1992. A phylogeny of extant species and subspecies of rhinoceros based on mitochondrial DNA sequence data. Joint meeting American Society of Naturalists, The Society of Systematic Biologists, and Society for the Study of Evolution, University of California, Berkeley.
- Ayres, J. M. 1992. Conservação da diversidade biológica na Amazonia. In *Anais do seminário internacional sobre Meio Ambiente, Pobreza e Desenvolvimento da Amazonia (SINDAMAZONIA)*, 133-36. Belem, Brazil: Governo do Estado do Para.
- \_\_\_\_\_. 1991. Field guide to neotropical mammals by Louise Emmons [book review]. *Trends in Ecology and Evolution* 6:169-70.
- Beehler, B. M. 1991. Papua New Guinea's wildlife and environments: What we don't yet know. *Conservation and environment in Papua New Guinea: Establishing research priorities. Proceedings of a symposium held June 3, 1991*, eds. M. Pearl, B. Beehler, A. Allison, and M. Taylor, 1-10. New York: Papua New Guinea and Wildlife Conservation International.
- Behler, J. L. 1991. Chinese alligator (*Alligator sinensis*). In *AAZPA Annual Report on Conservation and Science*, eds. M. Hutchins, R. J. Wiese, K. Willis, and S. Becker, 171-72. Bethesda, MD: American Association of Zoological Parks and Aquariums.
- \_\_\_\_\_, Q. Bloxam, and P. Tolson. 1992. Reintroduction potentials for captive-bred reptiles. World Conference on Breeding Endangered Species, Jersey, Channel Islands.
- \_\_\_\_\_, P. Brazaitis, and M. Wise. 1991. Crocodilian Advisory Group. In *AAZPA Annual Report on Conservation and Science*, eds. M. Hutchins, R. J. Wiese, K. Willis and S. Becker, 168-70. Bethesda, MD: American Association of Zoological Parks and Aquariums.
- \_\_\_\_\_, A. R. Breisch, and J. T. Eckler. 1991. The secret life of the bog turtle: Ecology of *Clemmys muhlenbergi* as elucidated by radiotelemetry. 1991 annual joint meeting, The Society for the Study of Amphibians and Reptiles and the Herpetologists League, Pennsylvania State University, State College, PA.
- Bennett, E. L. 1991. Mixed-species association of Cercopithecus monkeys in the Kakemega Forest, Kenya by Marina Cords (University of California, 1987) and A primate radiation: Evolutionary biology of the African guenon, ed. by Anne Gautier-Hion et al. (Cambridge University Press, 1988). [Book review.] *International Journal of Primatology* 12:185-90.
- Berkovits, A. 1992. Building a shared vision for environmental education: Successful funding partnerships. EPA Conference, Arlington, MA.
- Bleisch, W. V., and N. Chen. 1991. Ecology and behavior of wild black-crested gibbons *Hylobates concolor* in China with a reconsideration of evidence for polygyny. *Primates* 32:539-48.
- Boersma, P. D. 1991. Status of wild and captive penguin populations. *Trends in Ecology and Evolution* 6:381-82.
- Bolze, D. 1992. *The ivory trade and conserving the African elephant*. WCI Policy Report 1. Bronx, NY: New York Zoological Society, Wildlife Conservation International.
- Borowsky, B., and P. Aitken-Ander. 1991. Sexually dimorphic free-swimming behavior in the amphipod crustacean *Ampelisca abdita*. *Journal of the Marine Biology Association United Kingdom* 71:655-64.
- Brazaitis, P., and M. E. Watanabe. 1992. *Snakes of the world*. Sydney, Australia: Mallard Press. 176 pp.
- Bruning, D. F. 1991. Cause for alarm: The parrot trade. *Zoo View* 25(3):16-18.
- \_\_\_\_\_. 1992. In search of the Bulwers pheasant and crimson-headed partridge. *American Pheasant and Waterfowl Society* 92(5):4-13.
- \_\_\_\_\_. 1991. Ratites. In *Cambridge Encyclopedia of Ornithology*, eds., M. Brooke and T. Birkhead, 85-89. New York: Cambridge University Press.
- \_\_\_\_\_. 1992. Testimony on H.R. 5013, Wild Bird Conservation Act of 1992, June 16, 1992. House Subcommittee on Trade and House Subcommittee on Fisheries and Wildlife Conservation and the Environment.
- Calle, P. P. 1991. An outbreak of tularemia (*Francisella tularensis*) in zoo primates. In *Proceedings of the American Association of Zoo Veterinarians*, 218-20.
- \_\_\_\_\_, and C. A. Osborne. 1991. Clinical challenge, case 2: Cecal enteroliths in a white-handed gibbon (*Hylobates lar*). *Journal of Zoo & Wildlife Medicine* 22(2):261-62.
- Chiszar, D., H. M. Smith, C. W. Radcliff, and J. L. Behler. 1992. Cover-seeking behavior and ecdysis in red-spitting cobras (*Naja pallida*). *Bulletin of the Psychonomic Society* 30(3):215-16.
- Conway, W. 1992. Down with Mary's little lamb. *Wildlife Conservation* 95(1):20-21.
- \_\_\_\_\_. 1991. Volcano flamingos. *Wildlife Conservation* 94(6):56-63, 92-93.
- \_\_\_\_\_. 1992. What's in a name. *Wildlife Conservation* 94(4):26-27, 81.
- \_\_\_\_\_. 1991. A zoo-based international wildlife conservation program: Wildlife Conservation International. *AAZPA 1991 Annual Conference Proceedings*, 381-85.
- Cook, R. A. 1992. Clinical challenge. Case 1. Black-foot-



ed penguin. *Journal of Zoo & Wildlife Medicine* 23(1):135-36.

\_\_\_\_\_. 1992. Health care and shipment of cervids from AAZPA-accredited zoos. Bovine Tuberculosis Conference, University of Wisconsin-Madison, June 22.

\_\_\_\_\_, J. L. Behler, R. N. Quinn, and C. Vasser. 1991. New York Zoological Park employee health and safety programs. *Proceedings of American Association of Zoo Veterinarians*, 212-14.

\_\_\_\_\_, P. P. Calle, K. McClave, and S. Palma. 1992. Health care and medical problems of a captive bred and mother reared beluga whale (*Delphinapterus leucas*). *Proceedings of International Association of Aquatic Animal Medicine*, 107-10.

Decker, B. S., and M. F. Kinnaird. 1992. Tana River Red Colobus and Crested Mangabey: Results of recent censuses. *American Journal of Primatology* 26:47-52.

Denanne, P. A., and S. D. Strahl. 1992. Trade the conservation status of the family Psittacidae in Venezuela. *Bird Conservation International* 1:153-69.

Dierenfeld, E. S., N. Katz, J. Pearson, F. Murru, and E. D. Asper. 1991. Retinol and alpha-Tocopherol concentrations in whole fish commonly fed in zoos and aquariums. *Zoo Biology* 10:119-26.

\_\_\_\_\_, and J. T. McGuire. 1991. Effect of gamma-irradiation on alpha-Tocopherol in ruminant blood samples. *International Journal of Vitamin and Nutrition Research* 61:33-37.

\_\_\_\_\_, and B. L. Raphael. 1992. Circulating tocopherol, retinol, and minerals in captive and semi-free ranging Przewalski horses. *Erkrankungen der Zootiere (Berlin)* 34:249-54.

Doherty, J. 1991. The exhibition and management of geladas in the Baboon Reserve at the New York Zoological Park. *AAZPA 1991 Annual Conference Proceedings*, 599-605.

Elbin, S. B. 1992. Art and science of spacing out in New York City. *Proceedings of the colonial waterbird workshop*, Dallas, eds., A. M. Lyles and C. Sheppard, 23-24. Bronx, NY: New York Zoological Society.

\_\_\_\_\_. 1991. Recommendations for standardized transponder implantation sites. *CBSG News* 2(3):6-7.



My school on 78th Street in New York City had a Saturday club. Once a year we would put down the basketball or baseball and go to the New York Zoological Society's Bronx Zoo or New York Aquarium, where hour after hour we were intrigued by the animals. Then I did not realize just how precious this wildlife heritage is, but the images of the creatures stayed with me, and now I appreciate more than their beauty—I appreciate their very existence. If given the chance, others, especially our young people, can learn to care as well.

Michael D. Eisner  
Chairman and Chief Executive Officer  
The Walt Disney Company

\_\_\_\_\_, J. Burger, and F. W. Koontz. 1991. Evaluation of radio transmitter attachment methods for captive and reintroduced Bali mynahs [presentation]. American Ornithologists Union, McGill University, Montreal, Canada.

\_\_\_\_\_, and D. Wharton. 1991. Using barcode technol-

ogy to census zoo animals [poster]. *AAZPA 1991 Annual Conference Proceedings*, 622.

*Exploring Africa: Its past, its future*. 1991. Bronx, NY: New York Zoological Society, Education Department.

Frith, C. B., and D. Frith. 1992. Nesting biology of the short-tailed paradigalla *Paradigalla brevicauda*. *Ibis* 13:477-82.

Garibaldi, L. 1991. Life support systems currently employed for the maintenance and exhibit of live corals. *AAZPA 1991 Annual Conference Proceedings*, 201-205.

Gatesy, J., and G. Amato. 1992. Sequence similarity of 12S ribosomal segment of

Grajal, A., and S. D. Strahl. 1991. A bird with the guts to eat leaves. *Natural History* 100 (8):48-55.

Holmstrom, W. 1991. Radiated tortoise (*Geochelone radiata*). *AAZPA Annual Report on Conservation and Science*, eds., M. Hutchins, R. J. Wiese, K. Willis, and S. Becker, 166-167. Bethesda, MD: American Association of Zoological Parks and Aquariums.

Hundgen, K., M. Hutchins, C. Sheppard, D. Bruning, and W. Worth. 1991. Management and breeding of the red bird of paradise *Paradisaea rubra* at the New York Zoological Park. *International Zoo Yearbook* 30:192-99.

Janczewski, D., W. B. Karesh, H. Frazier-Taylor, D. Sajuthi, M. Andau, and F. Gombek. 1991. Genetic characterization of free ranging orang utans of Borneo and Sumatra. *The Great Apes Conference. Proceedings on the conservation of the great apes in the new world order of the environment*, Section 6.3.5.

Karesh, W. B., H. Frazier-Taylor, D. Sajuthi, D. Janczewski, M. Andau, F. Gombek, and S. J. O'Brien. 1991. Development of an orang utan genetic diversity study. *Proceedings of American Association of Zoo Veterinarians*, 177-80.

Kasimiroff, J., and R. A. Cook. 1991. Trends in oral pathology of captive wildlife. *Proceedings of the American Association of Zoo Veterinarians*, 24-26.

Kment, E. V. 1992. Rare and endangered psittacines at the New York Zoological Society's Wildlife Survival Center, St. Catherines Island. First Annual Spring Avian Educational Conference, Columbia, SC.

Koontz, F. W. 1991. Applying biology to endangered species management [a review of red panda biology, ed. by A.R.

mitochondrial DNAs of gharial and false gharial. *Copeia* 1992 (1):241-43.

Gibbons, E. F., Jr., F. W. Koontz, R. Cook, and M. K. Stoskopf. 1992. Behavioral medicine in zoological parks and aquariums [presentation]. Thirteenth annual meetings of the Society of Behavioral Medicine.

- Glatson, SPB Academic Publishing, 1989]. *Zoo Biology* 10375-78.
- \_\_\_\_\_. E. S. Dierenfeld, and R. S. Goldstein. 1992. Feed intake, digestion and passage of the proboscis monkey (*Nasalis larvatus*) in captivity. *Primates* 33(3):401-407.
- Loiselle, P. V. 1992. An annotated key to the genus *Hemichromis* Peters 1858. *Journal of the American Cichlid Association* 148:2-18.
- Lyles, A. M. 1992. *North American Regional Studbook of the Scarlet Ibis Eudocimus ruber* No. 1. Bronx, NY: New York Zoological Society.
- \_\_\_\_\_. 1991. The status of ibis, spoonbill, and heron captive populations in ISIS member institutions [poster]. *AAZPA 1991 Annual Conference Proceedings*, 635.
- \_\_\_\_\_. 1992. Studbooks and masterplans for colonial waterbirds: Are they meaningful? In *Proceedings of the colonial waterbird workshop*, Dallas, eds., A. M. Lyles and C. Sheppard, 31-32. Bronx, NY: New York Zoological Society.
- \_\_\_\_\_, and C. Sheppard, eds. 1992. *Proceedings of the colonial waterbird workshop*, Dallas. Bronx, NY: New York Zoological Society.
- Mainka, S., R. M. Cooper, S. R. Black, and E. S. Dierenfeld. 1992. Serum alpha-Tocopherol in captive and free-ranging raptors. *Journal of Zoo & Wildlife Medicine* 23:72-76.
- Mittermeier, R. A., T. Werner, J. M. Ayres, and G. B. Fonseca. 1992. O Pais da megadiversidade. *Ciencia Hoje* 14(81):20-27.
- Moehlman, P. D. 1992. All in the family. *Wildlife Conservation* 95(2):38-43.
- \_\_\_\_\_. 1991. Golden jackals and silverbacked jackals. In *Weekly Encyclopedia*. Tokyo, Japan: Asahi Shimbun Press.
- \_\_\_\_\_. 1991. Golden jackals and silverbacked jackals. In *Window on Wildlife*, eds., E. Niemi and A. Outwater. Dar es Salam, Tanzania: Tanzania Printers.
- \_\_\_\_\_. 1992. Introduction. In *Wild dogs: The natural history of the nondomestic canidae* by J. W. Sheldon, 1-3. New York: Academic Press.
- \_\_\_\_\_. 1992. Ngorongoro Conservation Area. In *Buffer zone management in Africa*, eds., M. Brown and M. Singer. Washington, D.C.: PVO-NGO-/NRMS Project.
- Munn, C. A. 1992. Macaw biology and ecotourism, or When a bird in the bush is worth two in the hand. In *New world parrots in crisis: Solutions from conservation biology*, eds., S. R. Beissinger and N. F. R. Snyder, 47-72. Washington, D.C.: Smithsonian Institution Press.
- \_\_\_\_\_. 1991. Tropical canopy netting and shooting lines over tall trees. *Journal of Field Ornithology* 62(4):454-63.
- O'Brien, T. G., and J. G. Robinson. 1991. Allomaternal care by female wedge-capped capuchin monkeys: Effects of age, rank, and relatedness. *Behaviour* 119(1):30-50.
- Oliva-Purdy, J., and S. Elbin. 1991. Effects of wing tags on boat-billed heron activity [poster]. In *AAZPA 1991 Annual Conference Proceedings*, 639.
- Pan American Congress on Conservation of Wildlife Through Education. 1991. Proceedings of a conference held in Caracas, Venezuela, 23-27 January 1990. 1 MS-DOS program disk, 9 ASCII data disks, 99 pp. graphs and charts. [Disk and pamphlet set.] Bronx, NY: Education Department, New York Zoological Society.
- Pearl, M. 1992. Conservation of Asian primates: Aspects of genetics and behavioral ecology that predict vulnerability. In *Conservation biology: The theory and practice of nature conservation, preservation, and management*, eds., P. L. Fielder and S. K. Jain, 297-320. New York: Chapman and Hall.
- \_\_\_\_\_. 1992. Conservation atlas of tropical forests: Asia and the Pacific, by N.M. Collins, J.A. Sayer, and T.C. Whitmore (MacMillan, 1991). [Book review.] *Conservation Biology* 6(2):305-306.
- \_\_\_\_\_. 1992. Three cheers... *Wildlife Conservation* 94(6):22-23, 84.
- \_\_\_\_\_, B. Beehler, A. Allison and M. Taylor, eds. 1991. *Conservation and environment in Papua New Guinea: Establishing research priorities*. Proceedings of a symposium held June 3, 1991. New York: Papua New Guinea and Wildlife Conservation International.
- Pennino, M., E. S. Dierenfeld, and J. L. Behler. 1991. Retinol, alpha-Tocopherol, and proximate nutrient composition of invertebrates used as feed. *International Zoo Yearbook* 30:143-49.
- Rabinowitz, A. R. 1991. Behavior and movements of sympatric civet species in Huai Kha Khaeng Wildlife Sanctuary Thailand. *Journal of Zoology (London)* 223:281-98.
- \_\_\_\_\_. 1991. *Chasing the dragon's tail*. New York: Doubleday, 242 pp.
- \_\_\_\_\_. 1990. Fire dry dipterocarp forest and the carnivore community in Huai Kha Khaeng Wildlife Sanctuary Thailand. *Natural History Bulletin of the Siam Society* 38:99-116.
- \_\_\_\_\_. 1990. Notes on the behavior and movements of leopard cats *Felis-bengalensis* in a dry tropical forest mosaic in Thailand. *Biotropica* 22:397-403.
- Raphael, B. L. 1992. Clinical textbook for veterinary technicians, second edition [book review]. *Journal of Zoo & Wildlife Medicine* 23:139.
- Redford, K. H., and J. G. Robinson. 1991. Park size and the conservation of forest mammals in Latin America. In *Latin American mammals: Their conservation, ecology and evolution*, eds., M. Mares and D. A. Schmidley, 227-34. Norman, OK: University of Oklahoma Press.
- \_\_\_\_\_, and J. G. Robinson. 1991. Subistence and commercial use of wildlife in Latin America. In *Neotropical wildlife use and conservation*, eds., J. G. Robinson and K. H. Redford, 6-23. Chicago: University of Chicago Press.
- Robinson, J. G. 1992. The expendable future: U.S. politics and the protection of biological diversity, by Richard Tobin [book review]. *Journal of Wildlife Management* 56:198.
- \_\_\_\_\_. 1992. Four neotropical rainforests, by Alwin H. Gentry [book review]. *Journal of Wildlife Management* 56:410-11.
- \_\_\_\_\_. 1991. RecycleBull: Smoke and mirrors in the environment [letter]. *Journal of Graphic Design* 9:15.
- \_\_\_\_\_. Sustainability and the conservation of primates. In *Topics in primatology, volume 2. Behavior ecology and conservation. Proceedings of the thirteen International Primate Society*, N. Itoigawa, V. Sugiyama, G. P. Sackett, and R. K. R. Thompson, 369-72. Tokyo, Japan: University of Tokyo Press.
- \_\_\_\_\_, and D. Bolze. 1992. The ivory trade and conserving the African elephant. *Endangered Species Update* 9(7&8):1.
- \_\_\_\_\_, and K. H. Redford.



1991. *Neotropical wildlife use and conservation*. Chicago: University of Chicago Press.
- \_\_\_\_\_. and K. H. Redford. 1991. Preface. In *Neotropical wildlife use and conservation*, eds., J. G. Robinson and K. H. Redford, xv-xvii. Chicago: University of Chicago Press.
- \_\_\_\_\_. and K. H. Redford. 1991. Sustainable harvest of neotropical forest mammals. In *Neotropical wildlife use and conservation*, eds., J. G. Robinson and K. H. Redford, 415-19. Chicago: University of Chicago Press.
- \_\_\_\_\_. and K. H. Redford. 1991. The use and conservation of wildlife. In *Neotropical wildlife use and conservation*, eds., J. G. Robinson and K. H. Redford, 3-5. Chicago: University of Chicago Press.
- Sajuthi, D., W. B. Karesh, R. McManamon, H. Martin, S. Amsel, and J. Kusba. 1991. Recommendations to the department of forestry of the Republic of Indonesia on the medical quarantine of orang utans intended for reintroduction. In *The Great Apes Conference. Proceedings on the conservation of the great apes in the new world order of the environment*, Section 6.3.10.
- \_\_\_\_\_. J. Pamungkas, A. Lelana, B. Joeniman, and W. B. Karesh. 1991. Medical aspects on orang utan reintroduction. In *The Great Apes Conference. Proceedings on the conservation of the great apes in the new world order of the environment*, Section 6.3.11.
- Sanford, C. E., E. S. Dierenfeld, and J. Lee. 1991. Nutrition. In *Falcon propagation: A manual on captive propagation*, eds., J. D. Weaver and T. J. Cade, 81-82. Boise, ID: Peregrine Fund.
- Schmitz, A., and S. D. Strahl. 1992. [Implications of seasonal variation in social system in the reproductive success of a cooperative bird, the Hoatzin]. In H. Alvarez Lopez, G. Kattan, and C. Murcia, eds., *Proceedings of the Third Neotropical Ornithological Congress*. Universite de Valle, Cali, Columbia, 79-82.
- Sheppard, C. 1992. *International studbook of the white-naped crane*, *Grus vipio*, 1991. Bronx, NY: New York Zoological Society.
- \_\_\_\_\_. and S. Ellis-Joseph. 1992. Colonial Waterbird Workshop discussion. In *Proceedings of the colonial waterbird workshop*, Dallas, eds., A. M. Lyles and C. Sheppard, 31-32. Bronx, NY: New York Zoological Society.
- \_\_\_\_\_. and A. R. Odum, programmers. 1991. Avian captive space survey [MS-DOS computer program.] A. Silveri, survey developer. Version 1.01. Bird Curators Group, American Association of Zoological Parks and Aquariums.
- Sievert, J., W. B. Karesh, and V. Sunde. 1991. Reproductive intervals in captive female western lowland gorillas with a comparison to wild mountain gorillas. *American Journal of Primatology* 24:227-34.
- Strahl, S. D. 1992. [An international strategy for the conservation and management of the family Cracidae in Latin America]. In H. Alvarez Lopez, G. Kattan, and C. Murcia, eds., *Proceedings of the Third Neotropical Ornithological Congress*. Universite de Valle, Cali, Columbia, 173-76.
- \_\_\_\_\_. J. Desenne, L. Jimenez, and I. Goldstein. 1991. Behavior and biology of the Hawk-headed parrot, *Derotrypus accipitrinus* in southern Venezuela. *Condor* 93:177-80.
- \_\_\_\_\_. and A. Grahall. 1991. Conservation of large avian frugivores in the management of neotropical protected areas. *Oryx* 25:50-55.
- \_\_\_\_\_. and A. Schmitz. 1992. [Demography of a cooperative bird, the Hoatzin, in relation to territory quality]. In H. Alvarez Lopez, G. Kattan, and C. Murcia, eds., *Proceedings of the Third Neotropical Ornithological Congress*. Universite de Valle, Cali, Columbia, 83-86.
- \_\_\_\_\_. J. L. Silva, and I. R. Goldstein. 1992. The bush dog (*Speothos venaticus*) in Venezuela. *Mammalia* 56 (1):9-14.
- Taber, A. B. 1991. The status and conservation of the Chacoan peccary in Paraguay. *Oryx* 25:147-55.
- Thoney, D. A. 1991. Population dynamics and community analysis of the parasite fauna of juvenile spot *Leiostomus xanthurus* Lacepede and Atlantic croaker *Micropogonias undulatus* (Linnaeus) Scianidae in two estuaries along the Middle Atlantic coast of the United States. *Journal of Fish Biology* 39(4):515-34.
- \_\_\_\_\_. and W. J. Hargis, Jr. 1991. Juvenile anisakine parasites from the Coelacanth *Latimeria chalumnae*. *Environmental Biology of Fishes* 32:281-84.
- Tim, N. M. 1991. Using native plants at the Central Park Zoo. *Association for Zoological Horticulture 1991 Annual Conference Proceedings*, 32.
- \_\_\_\_\_. 1991. Conservation of native plants. *Association for Zoological Horticulture Newsletter* 26(1):8.
- \_\_\_\_\_. 1992. Cycad alert—endangered cycads sold in the nursery trade. *Association for Zoological Horticulture Newsletter*, 27(2).
- Walker, S., and A. Rabinowitz. 1992. The small-mammal community of a dry-tropical forest in central Thailand. *Journal of Tropical Ecology* 8:57-71.
- Western, D. 1992. The biodiversity crisis: A challenge for biology. *Oikos* 63(1):29-38.
- \_\_\_\_\_. 1991. Biology and conservation: Making the relevant connection. *Conservation Biology* 5:431-33.
- Wet 'n wild: A self-guided tour for families*. 1991. Bronx, NY: Education Department, New York Zoological Society.
- Wharton, D. 1992. *North American regional studbook of the western lowland gorilla no. 5*. Bronx, NY: New York Zoological Society.
- \_\_\_\_\_. 1992. *Special masterplan report, North American regional studbook of the western lowland gorilla*. Bronx, NY: New York Zoological Society.
- World of Reptiles: A self-guided tour for families*. 1991. Bronx, NY: Education Department, New York Zoological Society.
- Zabaraukas, P., and F. Indiviglio. 1991. The unseen multitude: Design and management of invertebrate displays at the New York Bronx Zoo. *International Zoo Yearbook* 30:15-20.
- \_\_\_\_\_. 1992. Mimicry. In *Academic American Encyclopedia*. Danbury, CT.



*Guenter Skammel and Aquarium staff feed the harbor seals.*



# Sustaining the Effort



How the Society supports itself, serves the community, and informs the public. Reports on fund-raising, membership, marketing and communications, construction, maintenance, guest services, personnel, admissions, transportation, and group sales.

## Public Affairs

### *Campaign Promises.*

At our annual meeting on February 10, the Society pledged to raise \$100,000,000 for comprehensive global, national, and local initiatives. Thus began the public phase of the National Wildlife Crisis Campaign, our most ambitious and comprehensive capital fund-raising effort to date. Already, in the leadership phase of the Campaign, Society trustees, individual donors, foundations, corporations, and the New York City government have committed more than \$60,000,000 in public and private funds toward our goal.

One of the Campaign's core projects, the National Environmental Education Center, planned as a state-of-the-art teaching facility for science education, was supported this year with generous \$100,000 pledges from both the Cleveland H. Dodge Foundation, Inc. and the BGM Fund, and a \$300,000 pledge from The Starr Foundation. The Heckscher Foundation for Children pledged \$150,000 for Project Gorilla, which will link a new facility for our breeding group of lowland gorillas with programs for their conservation in the wild. Other major capital gifts include \$250,000 from the Robert Wood Johnson Jr. Charitable Trust for the Crisis Fund for Vanishing Wildlife's Saving Tropical Forests program.

The operating budgets of the Bronx and Aquarium facilities received more than \$650,000 in individual support this year, including \$100,000 from Trustee Enid A. Haupt, \$65,000 from Mr. and Mrs. Alexander Haig, \$50,000 from Mr. and Mrs. Leonard Stern, and a special gift from Mr. Allen Hale in memory of his wife Ellen as part of the Astor Court Memorial Bench Program. Welcomed this year as Society Best Friends—lifetime donors of \$1 million or

more—are Liz Claiborne and Art Ortenberg. In addition to several new gifts to the Pooled Income Fund, the Society received more than \$300,000 in bequests.

The popular Sponsor-a-Species Program added to its \$250 through \$5,000 categories with new \$50 and \$100 sponsorship opportunities. The Leslie Fay Company, Girl Scout Troop #269, the Birch Wathen-Lenox School, Princeton's Class of 1939, Kanbar Associates, the Kent Place School, and Louis Baldinger & Sons, Inc. are some of the 33 donors whose gifts totaled more than \$17,000.

Foundations contributed more than \$1,065,000 in general and designated support this year for the Society's wildlife centers. The Nichols Foundation, The Scherman Foundation, The Leonard N. Stern Foundation, the G. Unger Vetlesen Foundation, and The Robert Wilson Foundation each gave \$20,000 or more in general operating funds. Designated gifts include \$394,000 from the Edward John Noble Foundation for St. Catherines Wildlife Conservation Center, \$50,000 from The Aaron Diamond Foundation toward training New York City teachers, \$25,000 from the Charles A. Dana Foundation in support of education and Animal Health Center initiatives, \$25,000 from the Louis Calder Foundation toward educational programming for disadvantaged children, and \$15,000 from The Pinkerton Foundation to train the more than 550 local young people employed each summer by the Society. Generous support for the Central Park Children's Zoo was provided by the Edith and Herbert Lehman Foundation and The Overbrook Foundation.

With Gene McGrath, Chairman, President, and CEO of Consolidated Edison Company of New York, Inc. assuming chairmanship of the Business Committee,



*Vying for the Guinness Book of Records, children complete 15,000-piece cat puzzle in an event sponsored by Whiskas® at the Wildlife Conservation Park on July 18, 1991.*

nearly 100 corporations gave a total of \$1.1 million, exceeding our projections by nearly ten percent. Major gifts were received from The Bristol-Myers Squibb Foundation, Inc., Chase Manhattan Bank, N.A., CITIBANK, Consolidated Edison Company of New York, Inc., General Reinsurance Corporation, The Hoffmann-LaRoche Foundation, ITT Corporation, The New York Times Company Foundation, Inc., The Ogilvy Foundation, The Rockefeller Group, and Special Expeditions. Significant in-kind gifts were received from Corporate Language Services, Inc., General Motors Corporation, Olympus Corporation, Patagonia, Inc., The Perkin-Elmer Corporation, Pfizer, Inc., and Roche Diagnostic Systems, Inc.

Roy Disney was awarded the Society's Distinguished Leadership Award at the Business Committee's annual Corporate Benefit Dinner-Dance in June 1992. Responses were particularly encouraging this year, most likely due to the attendance of Mickey Mouse himself, and almost \$300,000 was raised for education and international field programs.

Major regional initiatives in Africa, Asia, and Latin America were supported by a total of \$3,814,250 in private support for the Society's field division. Contributions were received from individuals, corporations, foundations, the William Beebe Fellows, the Friends of the International Division (co-chaired this year by John Pierrepont, Mr. and Mrs. Joseph R. Siphron, and John Chancellor), direct-mail appeals and special events.

The John D. and Catherine T. MacArthur Foundation awarded major grants to field projects in southern China and new initiatives in Papua New Guinea

and Laos under the supervision of Assistant Director for Asia Mary Pearl. Once again, The Liz Claiborne Art Ortenberg Foundation provided leading support for a broad range of international efforts, totaling \$412,000 for major programs in Brazil, Congo Republic, Kenya, and Cameroon as well as an array of comprehensive, new Asian programs in Papua New Guinea and Malaysia to carry out critical field research, strengthen training programs for local conservationists, and promote the development of national non-governmental organizations. The Keith Wold Johnson Foundation generously donated \$100,000 to continue George Schaller's work on the Tibetan Plateau in the newly created 118,000-square-mile Chang Tang Wildlife Reserve. Other gifts included a \$50,000 grant from the Frank Weeden Foundation for conservation training programs in Venezuela, \$50,000 from the Tortuga Foundation for projects in Rwanda and Argentina, and a \$47,000 gift from the Sacharuna Foundation for empowering nature groups in developing countries. The Edward John Noble Foundation, the American Conservation Association, and the Kinnoull Foundation also awarded major grants.

In addition to a \$20,000 gift for a project to understand and protect the Chinchorro Banks coral atoll off the coast of Mexico, Special Expeditions, Inc. and its president, Sven-Olof Lindblad, generously provided the splendid 80-passenger cruise ship *Polaris* for a four-day floating symposium organized by the Paseo Pantera consortium. Attending were regional government ministers, Society and Caribbean Conservation Corporation (CCC) scientists and supporters, local conservation leaders, and press.

Individual support for field programs was received from Terry and William Pelster and Advisors Mrs. George K. Moss and Bradley Goldberg, who gave \$12,000 and \$21,000 respectively. George Hecht became a William Beebe Fellow with a gift of \$10,000, and \$20,000 was received by Betty Wold Johnson and Douglas Bushnell for Tanzanian projects. Nationwide, more than 9,000 new donors increased supporters of the Society's international work to 47,000. Special appeals included mailing campaigns (signed by actress Glenn Close) to renew the ban on international trade in elephant ivory, to protect rain forests, to combat wildlife trafficking, and to fund the Paseo Pantera ("Path of the Panther") program in Central America.



General Society membership continued to rise dramatically this year to 44,875 households. This 20 percent gain is largely the result of a highly successful on-site membership recruitment effort, now in its second year. Strategically placed membership carts staffed by persuasive sales personnel selling New York's most advantageous membership package have resulted in more than 20,000 memberships sold at the Society's wildlife conservation centers since July 1990. Another 4,000 members are enrolled annually through the Society's successful direct mail acquisition effort. In total, members and other donors contributed \$650,000 in annual support and \$180,000 in dues and gifts through several direct mail appeals.

All members, old and new, enjoy the many special members events at our facilities. On two rainy days this April, 400 members volunteered to join staff for Spring Clean-Up at the Wildlife Conservation Park, and in May, in more clement weather, more than 1,900 attended the first members morning at the Aquarium. The annual Member's Evening at the Park attracted 8,000 participants this June.

Through marketing and communications, the Society reached local, national, and international audiences ranging from schoolchildren to scientists. The Society's international field programs were featured in a variety of prominent outlets. *Field and Stream* called the Society's network of conservation projects in Central America "the most ambitious program in the hemisphere." *The New York Times* story on the rapidly disappearing Simien jackal of Ethiopia and the Society's work there was picked up by more than 30 other newspapers. Assistant Director for African



*Kids and Whiskers the Rabbitt paint Easter eggs at the Wildlife Conservation Park's Great Egg Event in April.*

Forests Bill Weber appeared on panels to discuss the ivory trade on PBS and CNN. And the National Geographic Explorer series released "The Mysterious Elephants of the Congo," with Michael Fay's project there playing a prominent role. Fay was also featured in a *TIME* magazine cover article, "Inside the World's Last Eden."

At the Aquarium, the unprecedented birth and rearing of two beluga whales provided copy and pictures for local and national news media from August on. The most persistent story of the year involved the relocation of Timmy, a mature male gorilla, from Cleveland to the Bronx and subsequent mating arrangements at the Wildlife Park. What began as a routine Species Survival Plan transfer for breeding purposes was slanted in some quarters as the breakup of Timmy's relationship with an infertile female gorilla in Cleveland. All media inquiries were addressed, and gradually the stories began to reflect a conservation message about Society efforts to breeding endangered species and to save them in the wild.

The May 18, 1992 issue of *Business Week* included a special wildlife supplement, created in collaboration with the Society, that reached the magazine's influential readership of 900,000. Written by noted environmental writer John G. Mitchell, with contributions by Senator Tim Wirth of Colorado, Michael Eisner of the Walt Disney Company, and Laurance S. Rockefeller, the text covered crucial issues of wildlife sur-



*Coin-drop vortex on Astor Court exhorts visitors to "Save Elephants."*



Angela Bofill sings at one of the "Cool Jazz Mondays" in the Central Park Wildlife Conservation Center.

vival and the Society's role in addressing them through its wildlife conservation parks and international field program. Revenue from the 18 1/2 pages of advertising will help support the Society's conservation efforts.

A coordinated marketing approach, with publicity, advertising, and promotion built around themed events contributed to expanding Wildlife Park attendance. Whimsical ten-second TV spots alerted viewers to that week's "Great Egg Event," "Zoo Babies," "Polar Bear," or "Gorilla Gala" weekend. Newspaper advertising was reintroduced after a long hiatus, while publicity and TV advertising reinforced the effort on the eve of each weekend event.

The "Big Cats" promotion was launched in cooperation with Ralston Purina to generate attendance and awareness of our snow leopard and other felid breeding and conservation programs. Pepsi, Kodak, and other corporate friends continued to promote the wildlife conservation park experience. Direct support from marketing programs (licensing, event sponsorships, and promotions) totaled \$200,400, representing a seven percent increase over last year's figure.

In-kind media and promotional support of various programs and events exceeded half a million dollars.

"Cool Jazz Mondays" brought sell-out crowds every Monday evening in June to the Central Park Zoo. Sponsored by CD 101.9 FM, Apple & Eve Juices, Corona Beer, and Frozfruit, the series featured jazz musicians Nelson Rangell, Tuck and Patti, Angela Bofill, Michel Camilo, and Strunz and Farah. Entirely new audiences were reached by these popular events and publicity they generated.

### Administrative Services

#### *Beginning of the Future.*

Wildlife Park Guest Services staff began to develop a five-year plan with evaluations of food, souvenirs, transportation, parking, and admissions, and including considerations of directional signage, graphics, and traffic flow. Some recommendations will be implemented in 1992 and 1993, others over a longer period of time.

Food Services focused on human resource development. Several new training programs were introduced for all levels of seasonal, managerial, and supervisory staff. A new employee orientation program, involving a guide book, a slide presentation, and tours of the facilities, stressed the importance of all Society

services to the ultimate goal of saving wildlife. "Working to save wildlife," the motto used by Membership and other departments, was also adopted for the bright new uniforms introduced for food personnel. New color schemes were employed on several restaurants and stands.

The New York Zoological Society is the most effective organization of its kind in the world. We also know you are at the midway point of the Society's Wildlife Crisis Campaign to raise \$100 million to save wildlife through a variety of persuasive and innovative programs. This campaign deserves the energetic support of all of us.

Roy Disney  
Vice Chairman, Board of Directors  
The Walt Disney Company

Merchandising relocated two major stands to key traffic flow hubs, making it more convenient for guests to make purchases upon entering and exiting the Park. The Jungle Stand, featuring gorilla merchandise, was moved closer to the Great Apes House, and the African Plains stand, after refacing and renaming, was moved to Wolf Woods in the Holarctic Zone. A "themed" stand, exclusively featuring polar bear merchandise, was opened in April. This concept will be further developed for other themes around the Park.



Group sales for the Park expanded into the Canadian market, through partnerships with Visit New York, USA and the New York State Department of Economic Development. Domestic and local tourist markets were targeted through joint programs with the Bronx Tourism Council's "Fun Passes" and Mayor Dinkins' "New York City—Yours to Discover" campaign.

Total attendance for the year was 3,254,417, including 1,853,159 at the Wildlife Park, 736,031 at the Aquarium, 652,938 at the Central Park Wildlife Conservation Center, and 12,289 at the Queens Wildlife Conservation Center during the first five days after its opening on June 26. Parking areas at the Bronx facility accommodated 272,949 vehicles. The Park's transportation system—Bengali Express, Zoo Shuttle, and Skyfari—carried 1,187,374 guests, and the paid exhibit buildings—the World of Reptiles, JungleWorld, and the World of Darkness—admitted 1,453,367 guests.

At the end of fiscal year 1992, the Society employed 678 full-time staff at the Park, the Aquarium, the Osborn Laboratories of Marine Sciences, the St. Catherine's Wildlife Conservation Center, the International Division, the Central Park Center, and the Queens Center, where 76 new employees were on duty by the opening in June.

Seasonal workers in food and souvenirs, maintenance, and other public service areas numbered 692. These employees were primarily young people from the Bronx and Brooklyn, many of them holding their first jobs. The Seasonal Training Employment Program (STEP) entered its fifth year and continued to be supported by corporate donations.

Department staff members were active in presenting papers and programs at workshops, symposiums, and conferences. They also represented the Society in several career workshops at area colleges and high schools.

### Operations

#### *Modernizing the Infrastructure.*

Two major systems at the Wildlife Park were completed during the year: the cogeneration and district heating system and an electronic monitoring system.

Cogeneration became fully operational during the winter and is now supplying all the Park's electricity and 50 percent of its heating, while exporting sur-

plus power. The new system won the United States Environmental Protection Agency Region II 1992 Environmental Quality Award for environmental, community, and non-profit organizations.

The Park's new monitoring system registers building temperatures and boiler operating conditions, detects break-ins, and acts as a fire alarm, sensing excessive heat and smoke. Signals are relayed by radio to two manned centers for rapid response.

Several improvements were made in animal habitat areas. Heart Lake, with its variety of wildfowl, and the Flamingo Exhibit were revived with new viewing sites. A pygmy goat enclosure was added to enhance the authenticity of the African Market. And exterior cages at the MouseHouse were renovated for marmosets, tamarins, and other small primates. More extensive is the City-funded renovation of the old Roosevelt elk meadow, which is being relandscaped and provided with new viewing areas, animal holding facilities, moat walls, and an aerating bubbler system.

Behind the scenes projects included the new Emil Dolensek Research Suite at the Wildlife Health Center, kitchen and quarantine renovations at the World of Birds, re-roofing of the animal holding barns and monorail station platform in Wild Asia, and installation of the new Polar Bear Souvenir Stand. The City-funded renewal of the Old Large Bird House as an office complex for the Public Affairs, Financial Services, and Administrative Services departments was scheduled to be completed in fall 1992.

City funds also provided a street-flusher truck to maintain visitor paths and a soil-shredder for recycling animal manure as compost.



*Getting a closer view of the wildfowl at Northern Ponds.*

## Report of the Treasurer

The fiscal year ended June 30, 1992 was the most difficult in the Society's nearly 100-year history. Substantial reductions in government support and reduced attendance at the International Wildlife Conservation Park and the Central Park Wildlife Conservation Center resulted in a \$3.1-million operating deficit. Reducing costs where it could, management was still faced with a decision to eliminate entire programs or spend down reserves. The latter course was chosen while at the same time efforts were heightened to increase earned income and restore government funding.

### General Operating Support and Revenue.

Contributed support of \$6.4 million included \$2 million in unrestricted giving, a welcome ten percent increase over the previous year. The Lila Acheson Wallace Fund for the New York Zoological Society made available a \$2.4-million grant for operating purposes, \$1 million more than last year. Much of the increase was used to partially offset reduced City support. Membership dues reached nearly \$2.3 million as the result of an aggressive on-site sales program at each institution. Endowment income provided \$3.1 million.

The City of New York provided support through the Department of Cultural Affairs for the Wildlife Park and New York Aquarium and through the Department of Parks and Recreation for the Central Park and Queens centers. The State of New York Natural Heritage Trust Program provided additional operating support for the Wildlife Park and New York Aquarium. Federal sources included National Science Foundation and Institute for Museum Services grants for education programs and United States Agency for International Development funding for the Society's international field programs.

	(\$000)			
	City	State	Federal	Total
International Wildlife Conservation Park	6,912	1,622	374	8,908
New York Aquarium	1,805	193	11	2,009
Central Park and Queens Wildlife Conservation Centers	3,523			3,523
International Division	<u>          </u>	<u>          </u>	<u>1,433</u>	<u>1,433</u>
Totals	12,240	1,815	1,818	15,873

Combined attendance exceeded 3.25 million visitors generating \$9.8 million in gate admission and exhibit entry fees. Guest Services revenues (food, merchandising sales, and parking) added \$8.1 million.

### General Operating Expenditures.

Program costs accounted for 81 percent of operating expenditures; fund raising, 4 percent; management and general, 7 percent; and Guest Services operations, 8 percent.

Personnel costs, including employee benefits and payroll taxes, were \$29.7 million (56 percent). Supplies, materials, and purchased services amounted to \$10.6 million (20 percent). Included here were expenses in connection with a three-year *Wildlife Conservation* magazine direct-mail subscription campaign which began last September. Grants to fund field conservation programs amounted to \$4.3 million (8 percent). Animal food and forage costs were \$1 million (2 percent).

Telephone and utility costs were \$2.4 million (4 percent); property and casualty insurance, \$1.1 million (2 percent); advertising, \$1.1 million (2 percent). The cost of Guest Services food and merchandise sales was \$1.7 million (3 percent).



### Capital Improvements.

Capital improvement expenditures were \$18.6 million, a record amount, which included \$8.6 million for the ongoing renovation of the Old Bird House at the Wildlife Park and \$5.9 million for Sea Cliffs at the Aquarium. Both of these projects are expected to be completed in 1993. Approximately 70 percent of these costs were funded through a \$12.7-million grant from the City of New York.

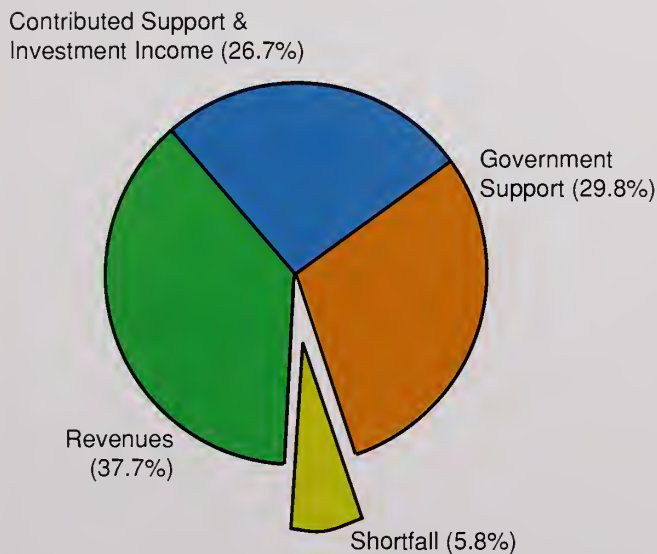
### Endowment Funds.

	Market value (in millions)
General	\$40.9
International Division	26.3
International Wildlife Conservation Park	19.4
New York Aquarium	3.0
Collection accessions	.7
Total	\$90.3

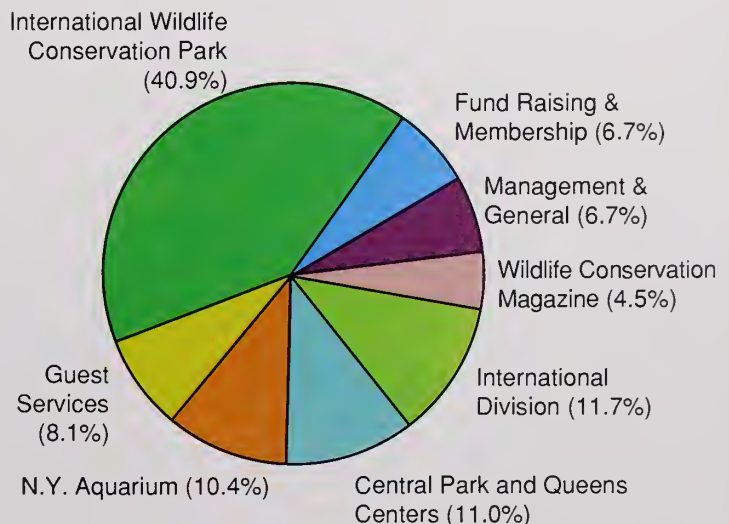
At fiscal year end, endowment funds totaled \$90.3 million, of which 77 percent was invested in equities. The Society's portfolio performance continues to place it in the top decile of similar tax-exempt funds.

Frederick A. Melhado  
Treasurer

### Sources of Operating Support and Revenue



### Operating Expenditures



## Independent Auditors' Report

The Board of Trustees  
New York Zoological Society:

We have audited the accompanying balance sheet of New York Zoological Society as of June 30, 1992, and the related statements of support and revenue, expenditures, capital additions and changes in fund balances, and cash flows for the year then ended. These financial statements are the responsibility of the Society's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

As explained in note 1 to the financial statements, expenditures for land, buildings and equipment are not capitalized; therefore, depreciation of buildings and equipment is not recorded. The effect of this departure from generally accepted accounting principles on the financial statements is not readily determinable.

In our opinion, except for the effect on the financial statements of the matter discussed in the preceding paragraph, the financial statements referred to above present fairly, in all material respects, the financial position of New York Zoological Society as of June 30, 1992, and the results of its operations and its cash flows for the year then ended in conformity with generally accepted accounting principles.

*KPMG Peat Marwick*

September 18, 1992



## NEW YORK ZOOLOGICAL SOCIETY

### Balance Sheet

June 30, 1992

Assets	Operating <u>funds</u>	Endowment <u>funds</u>
Cash, including interest bearing amounts of \$13,737,456	\$16,461,160	—
Investments (note 2)	25,512,945	38,107,200
Accounts receivable	1,622,110	—
Grants and pledges receivable	10,141,316	—
Inventories, at lower of cost or market	576,355	—
Prepaid expenses and deferred charges	1,479,361	—
	<u>\$55,793,247</u>	<u>38,107,200</u>
 Liabilities and Fund Balances		
Accounts payable and accrued expenses	10,080,799	—
Deferred restricted support and revenue (note 6)	19,510,047	—
	<u>29,590,846</u>	<u>—</u>
Fund balances:		
Unrestricted:		
Designated for long-term investment	25,512,945	—
Undesignated	689,456	—
Endowment:		
Income unrestricted	—	20,329,696
Income restricted	—	12,646,743
Term endowment - income unrestricted (note 4)	—	5,130,761
	<u>26,202,401</u>	<u>38,107,200</u>
	<u>\$55,793,247</u>	<u>38,107,200</u>

See accompanying notes to financial statements.

## NEW YORK ZOOLOGICAL SOCIETY

### Statement of Support and Revenue, Expenditures, Capital Additions and Changes in Fund Balances

Year ended June 30, 1992

	<u>Operating funds</u>			<u>Endowment funds</u>
	<u>General</u>	<u>Capital</u>	<u>Total</u>	
Operating support and revenue:				
Contributions and fund raising events, net	\$ 6,398,776	748,128	7,146,904	—
Grant from supporting organization (notes 6 and 10)	2,429,495	1,363,854	3,793,349	—
Government support:				
City of New York	12,239,947	12,677,174	24,917,121	—
Other	3,633,125	—	3,633,125	—
Admission fees	6,952,983	—	6,952,983	—
Exhibit admissions	2,908,283	—	2,908,283	—
Membership dues	2,295,543	—	2,295,543	—
Endowment and other investment income	3,100,539	50,445	3,150,984	—
Publications and related revenues	1,146,227	—	1,146,227	—
Education programs revenue	499,037	—	499,037	—
Collection sales (note 7)	—	26,643	26,643	—
Miscellaneous revenue	422,824	1,700	424,524	—
	<u>42,026,779</u>	<u>14,867,944</u>	<u>56,894,723</u>	<u>—</u>
Guest services (note 9)	8,074,785	—	8,074,785	—
Total operating support and revenue	<u>50,101,564</u>	<u>14,867,944</u>	<u>64,969,508</u>	<u>—</u>
Expenditures:				
Program services:				
Wildlife Park	21,193,806	11,880,959	33,074,765	—
Aquarium/Marine Sciences	5,556,483	5,984,368	11,540,851	—
St. Catherines Wildlife Conservation Center	432,526	7,800	440,326	—
International Division	6,258,124	—	6,258,124	—
Publications	2,383,714	—	2,383,714	—
Membership activities	1,274,565	—	1,274,565	—
City Zoos project (note 8)	5,865,020	713,231	6,578,251	—
Total program services	<u>42,964,238</u>	<u>18,586,358</u>	<u>61,550,596</u>	<u>—</u>

(Continued)



## NEW YORK ZOOLOGICAL SOCIETY

### Statement of Support and Revenue, Expenditures, Capital Additions and Changes in Fund Balances Continued

	<u>Operating funds</u>			<u>Endowment funds</u>
	<u>General</u>	<u>Capital</u>	<u>Total</u>	
Supporting services:				
Management and general	3,572,856	—	3,572,856	—
Fund raising	2,324,687	—	2,324,687	—
Total supporting services	5,897,543	—	5,897,543	—
Guest services (note 9)	4,331,876	—	4,331,876	—
Total expenditures	53,193,657	18,586,358	71,780,015	—
Excess of expenditures over operating support and revenue, carried forward	(3,092,093)	(3,718,414)	(6,810,507)	—
Excess of expenditures over operating support and revenue, brought forward	\$ (3,092,093)	(3,718,414)	(6,810,507)	—
Bequests	309,033	—	309,033	—
Realized net gains on investments	1,121,061	22,223	1,143,284	—
Excess (deficiency) of support and revenue over expenditures before capital additions	(1,661,999)	(3,696,191)	(5,358,190)	—
Capital additions:				
Contributions	—	—	—	471,000
Realized net gains on investments	—	—	—	1,746,704
Total capital additions	—	—	—	2,217,704
Excess (deficiency) of support and revenue over expenditures after capital additions	(1,661,999)	(3,696,191)	(5,358,190)	2,217,704
Fund balances at beginning of year	26,626,913	—	26,626,913	40,823,174
Term endowment expiration (note 4)	1,237,487	3,696,191	4,933,678	(4,933,678)
Fund balances at end of year	\$ 26,202,401	—	26,202,401	38,107,200

See accompanying notes to financial statements.

## NEW YORK ZOOLOGICAL SOCIETY

## Statement of Cash Flows

Year ended June 30, 1992

	Operating <u>funds</u>	Endowment <u>funds</u>
Cash flows from operating activities:		
Excess of expenditures over support and revenue after capital additions and term endowment expiration	\$ (424,512)	(2,715,974)
Adjustments to reconcile excess of expenditures over support and revenue after capital additions and term endowment expiration to net cash provided by (used in) operating activities:		
Realized net gains on investments	(1,121,061)	(1,746,704)
Increase in accounts receivable	(134,635)	—
Increase in grants and pledges receivable	(669,503)	—
Decrease in inventories	373,249	—
Increase in prepaid expenses and deferred charges	(337,636)	—
Increase in accounts payable and accrued expenses	3,584,442	—
Increase in deferred restricted support and revenue	2,256,176	—
Decrease in other liabilities	(413,178)	—
Total adjustments	3,537,854	(1,746,704)
Net cash provided by (used in) operating activities	3,113,342	(4,462,678)
Cash flows from investing activities:		
Sales of investments	31,172,627	24,989,573
Purchase of investments	(29,431,219)	(20,526,895)
Net cash provided by investing activities	1,741,408	4,462,678
Cash flows from financing activities:		
Repayments of loan payable	(842,159)	—
Net increase in cash	4,012,591	—
Cash at beginning of year	12,448,569	—
Cash at end of year	\$16,461,160	—
Supplemental disclosure - interest paid	\$ 55,994	—

See accompanying notes to financial statements.



## NEW YORK ZOOLOGICAL SOCIETY

## Notes to Financial Statements

June 30, 1992

## (1) Summary of Significant Accounting Policies

The financial statements of the Society have been prepared on the accrual basis, except for depreciation as explained below. Other significant accounting policies follow:

*Fund Accounting*

In order to ensure observance of limitations and restrictions placed on the use of available resources, the accounts are maintained in accordance with the principles of fund accounting. This is the procedure by which resources for various purposes are classified for accounting and reporting purposes into funds established according to their nature and purposes. Separate accounts are maintained for each fund; however, in the accompanying financial statements, funds that have similar characteristics have been combined into fund groups.

The assets, liabilities and fund balances of the Society are reported in two self-balancing fund groups:

**Operating funds**, which include unrestricted and restricted resources:

- Unrestricted funds represent the funds available for the support of Society operations.
- Funds restricted by the donor, grantor, or other outside party for particular operating purposes (including accessions and other capital additions) are deemed to be earned and reported as revenues of operating funds when the Society has incurred expenditures in compliance with the specific restrictions. Such amounts received but not yet earned are reported as deferred restricted support and revenue.

**Endowment funds**, which include the following resources:

- Funds that are subject to restrictions of gift instruments requiring in perpetuity that the principal be invested and only the income be used.

- Term endowment funds which must be held intact except that, at some future date or specified occurrence, some portion or all of the principal may be used (see note 4).

*Plant Assets and Depreciation*

Plant acquisitions including buildings and improvements constructed on land owned by the City of New York are not capitalized and, accordingly, depreciation is not recorded in the Society's financial statements. Major expenditures for buildings and improvements are reflected as capital expenditures in the accompanying financial statements.

*Collections*

Expenditures for collections are not capitalized.

*Other Matters*

All gains and losses arising from the sale, collection or other disposition of investments and other non-cash assets are accounted for in the fund that owned the assets. Ordinary income from investments, receivables, and the like, is accounted for in the fund owning the assets, except for income derived from investments of endowment funds, which is accounted for, if unrestricted, as revenue of the unrestricted operating fund or, if restricted, as deferred amounts until the terms of the restriction have been met.

Enforceable pledges for operating purposes, less an allowance for uncollectible amounts, are recorded as receivables in the year made. Pledges for support of current operations are recorded as operating fund support. Pledges for support of future operations are recorded as deferred amounts in the operating fund. Pledges to the endowment funds are recognized upon payment of the pledge.

## (2) Investments

Investments are reflected at cost or fair market value at date of gift. The market value and carrying value of investments managed by the Society at June 30, 1992 were as follows:

Continued

**Notes to Financial Statements (Continued)**

	Market value	Carrying value
Operating funds	\$ 35,564,036	25,512,945
Endowment funds	54,732,968	38,107,200
Wallace Fund*	<u>53,853,432</u>	<u>52,454,216</u>
	<u>\$ 144,150,436</u>	<u>116,074,361</u>

\* The accompanying balance sheet does not include these investments which are managed by the Society on behalf of the Wallace Fund (see note 10).

Details of investments managed by the Society at June 30, 1992 were as follows:

	Market value	Carrying value
Net interfund payables	\$ 459,662	459,662
Short-term investments	12,730,120	12,685,928
Corporate stocks	106,837,841	79,111,812
U. S. Government obligations	<u>24,122,813</u>	<u>23,816,959</u>
	<u>\$ 144,150,436</u>	<u>116,074,361</u>

Investments are pooled on a market value basis with each individual fund subscribing to or disposing of units on the basis of the value per unit at market value, determined quarterly. Of the total units, each having a market value of \$298.01, 183,663 units were owned by the endowment funds, 119,339 units were owned by operating funds and 180,712 were owned by the Lila Acheson Wallace Fund for the New York Zoological Society (Wallace Fund) at June 30, 1992. The average earnings per unit, exclusive of net gains, amounted to \$7.61 for the year ended June 30, 1992.

During the year ended June 30, 1992, investment pool purchases and sales amounted to \$49,958,114 and \$56,162,200, respectively.

The following tabulation summarizes changes in relationships between carrying values and market values of investments:

	Market value	Carrying value	Net gains
End of year	\$ 144,150,436	116,074,361	28,076,075
Beginning of year	<u>110,940,258</u>	<u>90,281,506</u>	<u>20,658,752</u>
Increase in unrealized net gains for year			7,417,323
Realized net gains for year			<u>4,191,952</u>
Total net gains for year			<u>\$11,609,275</u>

**(3) Repayment of Loan Payable**

In April 1992 the Society satisfied its outstanding indebtedness to the Economic Development Corporation for financing related to the construction of a cogeneration facility at the Wildlife Park. Concurrent with this transaction, the City of New York, pursuant to a Memorandum of Understanding, awarded an additional \$1,400,000 grant toward the cost of this project.

**(4) Term Endowment (Animal Kingdom Fund)**

During 1976, the Society initiated a capital funds campaign. The campaign included a term endowment fund to serve various functions, as described below, subject to the following conditions:

- (a) The income of the term endowment fund shall be used for the general operating purposes of the Society; and
- (b) The principal of the term endowment fund may be expended only upon the affirmative vote of two-thirds of the Trustees present at any duly held meeting of the Board of Trustees or its Executive Committee: (i) to finance programs or improvements to facilities (i.e., the Wildlife Park, the New York Aquarium, or other facilities of the Society) to produce revenue or increase attendance; or (ii) to ensure the survival of the Society if funds from other sources fail to provide sufficient revenue to maintain the Society's programs; provided, however, that in the case of any contribution to the term endowment fund which was subject to a restriction not to expend the principal of such contribution without the prior consent of the donor thereof, in addition to the vote of the Trustees described above, such consent must be obtained in writing prior to the expenditure of such principal. For the year ended June 30, 1992, the Society transferred expired term endowments aggregating \$4,933,678 to operating funds.

**(5) Pension Plan**

All eligible Society employees are members of the Cultural Institutions Retirement System's (CIRS) Pension Plan, a defined benefit plan. Pension expense for the year ended June 30, 1992 was

*Continued*



**Notes to Financial Statements (Continued)**

approximately \$890,000, of which approximately \$222,000 was financed by an appropriation from the City of New York. The current year's provision includes amortization of prior service costs over a period of 30 years which commenced June 30, 1974. The Society's policy is to fund pension cost accrued, and no unfunded vested benefits existed as of June 30, 1991, the date of the latest plan valuation.

Because the CIRS Plan is a multi-employer plan, certain information as it relates to vested and nonvested benefits as well as plan assets is not readily available.

**(6) Deferred Restricted Support and Revenue**

The changes in deferred restricted support and revenue for the year ended June 30, 1992 were as follows in Figure A.

**(7) Collections**

During the year ended June 30, 1992, animal collection accessions aggregated approximately \$124,000, while deaccessions aggregated approximately \$27,000.

**(8) City Zoos Project**

The Society and the City of New York have entered into agreements with respect to the Central Park, Prospect Park and the Queens Wildlife Conservation Centers which provide for the City's renovation of these facilities in accordance with plans developed through consultation with the Society and approved by the City and, thereafter for the Society's operation and management with funding from the City, for an initial ten-year term, renewable by the Society for five additional ten year terms. The Society is currently involved in the operation and management of the Central Park and the Queens Centers.

**(9) Guest Services**

Revenues and expenditures of guest services (consisting of food, merchandise sales and parking) for the

year ended June 30, 1992 were as follows:

	<u>Revenues</u>	<u>Expenditures</u>
Wildlife Park	\$ 5,961,115	3,492,670
New York Aquarium	1,726,721	839,206
Central Park Wildlife Center*	<u>386,949</u>	<u>—</u>
	\$ <u>8,074,785</u>	<u>4,331,876</u>

\* Guest service operations at the Central Park Wildlife Conservation Center have been contracted to independent vendors who make remittances to the Society based upon sales.

**(10) Lila Acheson Wallace Fund for the New York Zoological Society (Wallace Fund)**

The Wallace Fund was established for the benefit of the New York Zoological Society in 1982. It is governed by an independent Board of Directors, including representatives of The Reader's Digest Association, Inc. and of the Society. It is a separate New York not-for-profit corporation that has been classified by the Internal Revenue Service as a supporting organization under Section 509(a)(3) of the Internal Revenue Code and recognized as tax exempt under Section 501(c)(3) of the Code. As of June 30, 1992, the market value of the net assets of the Wallace Fund approximated \$190,328,000.

Income of the Wallace Fund is granted each year to support the beautification and maintenance of the International Wildlife Conservation Park and the Central Park Wildlife Conservation Center, and such other programs as may be agreed upon by the Society and Directors of the Wallace Fund. The Wallace Fund granted \$3,750,000 to the Society during fiscal 1992. In March 1991, the Wallace Fund entered into an investment delegation agreement with the Society pursuant to which the Society's investment committee assumed management of certain Wallace Fund assets which participate in the Society's pooled investment fund (see note 2).

Figure A

	<u>Balance at beginning of year</u>	<u>Additions</u>	<u>Expenditures</u>	<u>Balance at end of year</u>
Contributions and fund raising events	\$ 9,626,554	7,245,388	5,138,854	11,733,088
Grant from supporting organization	2,546,943	3,750,000	3,793,349	2,503,594
Fees and grants from governmental agencies	2,739,958	14,976,922	14,367,690	3,349,190
Investment income	1,376,539	1,054,586	1,524,749	906,376
Net gains on investment transactions	852,323	—	22,223	830,100
Other	<u>111,554</u>	<u>358,435</u>	<u>282,290</u>	<u>187,699</u>
<b>Totals</b>	\$ <u>17,253,871</u>	<u>27,385,331</u>	<u>25,129,155</u>	<u>19,510,047</u>

## Committees of NYZS The Wildlife Conservation Society

### Aquarium and Osborn Laboratories Planning Committee

Henry Clay Frick II, *Chairman*  
George F. Baker III  
Eli Balin  
William Conway  
Mrs. Henry Clay Frick II  
Elga Gimbel  
Edwin Jay Gould  
Nixon Griffis  
Charles J. Hamm  
John R. Hearst, Jr.  
John N. Irwin III  
Frank Y. Larkin  
Edith McBean Newberry  
Richard T. Perkin  
Howard Phipps, Jr., *ex-officio*  
John Pierrepont  
Peter G. Schiff

### Budget and Salary Committee

Frederick A. Melhado, *Chairman*  
William Conway  
Robert Wood Johnson IV  
Frank Y. Larkin  
John McKew  
Howard Phipps, Jr., *ex-officio*  
John Pierrepont  
David T. Schiff

### Business Committee

Peter T. Pruitt, *Chairman*  
Michael W. Bealmear  
Terrance J. Bruggeman  
Coleman Burke  
Martha L. Byorum  
Jonathan Cohen  
Charles W. Drouillard  
Peter Graham  
Peter Habley  
Robert V. Hatcher, Jr.  
Michael Henning  
S.A. Ibrahim  
Eugene R. McGrath  
Eric Ruttenberg  
Robert J. Sywolski  
Joseph V. Vittoria  
Richard A. Voell

### Conservation Committee

John Pierrepont, *Chairman*  
Frank Y. Larkin, *Chairman*,  
*Program Subcommittee*  
Jane Alexander  
Marianna Baker  
Mrs. Donald Bruckmann  
Guy Cary  
Liz Claiborne  
William Conway  
Mrs. Edgar M. Cullman  
John Elliott, Jr.  
Henry Clay Frick II  
Robert G. Goelet  
Bradley Goldberg  
Sydney Gould  
Nixon Griffis  
Robert Kean, Jr.  
Richard Lattis  
Anthony D. Marshall  
Mrs. George K. Moss  
Edith McBean Newberry  
Art Ortenberg  
Mrs. Gordon B. Pattee  
Mary Pearl  
Howard Phipps, Jr., *ex-officio*  
John Robinson  
Mrs. Joseph R. Siphron  
Mrs. Alexander B. Slater  
Mrs. James Stebbins  
Allison Stern  
Mrs. Richard B. Tweedy  
Sue Erpf Van de Bovenkamp  
William Weber  
David Western

### Development Committee

John Pierrepont, *Chairman*  
Mrs. Vincent Astor  
Guy Cary  
John Chancellor  
John Elliott, Jr.  
Henry Clay Frick II  
John N. Irwin II  
Frank Y. Larkin  
Anthony D. Marshall  
Frederick A. Melhado  
Howard Phipps, Jr., *ex-officio*  
Ernesta G. Procope

### Education Committee

Anthony D. Marshall, *Chairman*  
Mrs. Charles A. Dana, Jr.  
John Elliott, Jr.  
Robert G. Goelet  
C. Walter Nichols III  
Heidi Nitze  
George Page  
Mrs. Charles L. Wilson III

### Marketing and Communications Committee

John Elliott, Jr., *Chairman*  
Mrs. William C. Beutel  
Steve Bowan  
Terrance J. Bruggeman  
Jane R. Fitzgibbon  
Anthony D. Marshall  
Mrs. George K. Moss  
Mrs. Gordon B. Pattee  
Ernesta G. Procope  
Jonathan Rinehart  
Faith Rosenfeld  
John T. Sargent  
David T. Schiff  
Irwin Segelstein

### Nixon Griffis Fund for Zoological Research Committee

John Behler, *Chairman*  
William Conway  
Robert Cook  
Nixon Griffis, *ex-officio*  
John N. Irwin III  
Frank Y. Larkin  
Mrs. George K. Moss

### National Wildlife Crisis Campaign Committee

Mrs. Gordon B. Pattee, *Chairman*  
William Conway  
John Elliott, Jr.  
Frank Y. Larkin  
Howard Phipps, Jr.  
David T. Schiff

### International Council

Mrs. Charles A. Dana, Jr.,  
*Co-Chairman*  
Mrs. Benjamin A. Groves,  
*Co-Chairman*  
Eben W. Pyne, *Co-Chairman*

### Conservation Council Executive Committee

George W. Ahl, III, *Co-Chairman*  
Mrs. Charles L. Wilson, III,  
*Co-Chairman*  
Anthony Dick  
Robert A. Engel  
Mrs. Thomas Espy  
Mr. and Mrs. David Howe  
Beverly Little  
Brin McCagg  
Edmund A. Moulton  
Andrew N. Schiff  
B. Andrew H. Spence  
Cynthia Sulzberger  
F. Skiddy von Stade, III



## Staff of NYZS The Wildlife Conservation Society

### Administration

William Conway, *General Director*  
 Kathleen Wilson, *Assistant Director, Administration*  
 Louise Ingenito, *Secretary to the General Director*  
 Laura Elwyn, *Secretary*

### Wildlife Conservation, Education, and Science

#### International Wildlife Conservation Park ("Bronx Zoo")

William Conway, *Director*  
 James G. Doherty, *General Curator*

#### Mammalogy

James G. Doherty, *Chairman, Carter Chair of Mammalogy*  
 Fred W. Koontz, *Curator*  
 Patrick Thomas, *Curatorial Intern*  
 Penny Kalk, Frederick Sterling, *Collections Managers*  
 Frank Casella, Michael Tiren, Claudia Wilson, *Supervisors*  
 Margaret Gavlik, *Assistant Supervisor*  
 Colleen McCann, *Primatologist*  
 Robert Terracuso, *Primary Wild Animal Keeper*  
 Ralph Aversa, Howard Diven, Lorainne Hershonik-Golding, Gilbert Gordian, Kate Hecht, Florence Klecha, Warren Lawston, Francis Leonard, Kathleen MacLaughlin, Joseph Mahoney, Joan McCabe-Parodi, Linde Ostro, William Sheshko, Atanasio Solanto, Philip Steindler, Kimberly Tropea, Martin Zybura, *Senior Wild Animal Keepers*

Suizeko Aizeki, Blakeslee Barnes, Susan Ciocci, Mark Colletti, Lisa Deventhal, Kitty Dolan, Doug Dusenberry, Jill Eastman, Carol Evans, Pam Engleson, Carolyn Panthen, Michael Gatti, Allison Hart, Diane Herbert, Karen Iannuccilli, Denise Kaufman, Philip Kirsimagi, Denise McGill, Patricia Meehan, Lisa Mielke, Jeff Munson, Peter Psillas, Lisette Ramos, Jennifer Rodman, Christopher Rubbert, Lorraine Salazar, Gerald Stark, Dianne Tancredi, Chris Theis, Monique Teich, Michelle Tremko, Nancy Wakeham, Chris Wilenkamp, *Wild Animal Keepers*

Larry Gordon, Peter Mosca, *Maintainers*  
 Harold Johnston, *Assistant Maintainer*  
 Roseanne Thiemann, *Supervising Departmental Stenographer*

#### Ornithology

Donald F. Bruning, *Chairman and Curator*  
 Christine Sheppard, *Curator*  
 Annarie Lyles, *Assistant Curator*  
 Eric Edler, *Collections Manager*  
 Jean Ehret, *Supervisor*  
 Steph Diven, Robert Edington, Joy Gonzalez, Lorraine Grady, Kurt Hundgen, Susan Maher, Frank Paruolo, Lee Schoen, Paul Zabarauskas, *Senior Wild Animal Keepers*  
 Marisel Comulade, Patti Cooper, Todd Gilbert, Mark Hofling, Ingrid Jacobson, Paul Kozakiewicz, Susan Leiter, Wayne Murphy, Douglas Piekarz, Sarah Rounceville, Robin Sobelman, Hans Walters, Kim Yozzo, *Wild Animal Keepers*  
 Paula Young, *Departmental Secretary*  
 Gerard Casadei, *Intern in Ornithology*  
 Giuseppe deCampoli, Ostrom Enders, Winston Guest, Jr., Frank Y. Larkin, William K. Macy, Jr., S. Dillon Ripley, Charles Sivelle, Charles D. Webster, *Field Associates*

#### Herpetology

John L. Behler, Jr., *Curator*  
 William Holmstrom, *Superintendent*

Kathleen Gerety, *Senior Wild Animal Keeper*  
 Sandra M. Blanco, Peter Taylor, Richard L. Zerilli, *Wild Animal Keepers*  
 Gail Bonsignore, *Supervising Secretary*  
 Robert Brandner, William H. Zovickian, *Field Associates*

#### St. Catherines Wildlife Conservation Center

John Iaderosa, *Associate Curator in Charge*  
 Von Kment, *Assistant Curator of Birds*  
 Brad Winn, *Senior Aviculturist*  
 James Tamarack, *Collections Manager*  
 Jeffrey Spratt, *Zoologist*  
 Dan Beetem, *Mammalogist*  
 Mort Silberman, Terry Norton, *Veterinary Consultants*  
 Royce Hayes, *Superintendent, St. Catherines Island*

#### Operations

David P. Cole, *Director*  
 Roger Welch, *Construction Manager*  
 Norman Jardine, *Supervising Departmental Stenographer*  
 Paul Rivet, *Energy Consultant*

#### Construction

Barry B. Feltz, *Superintendent*  
 Michael F. Santomaso, *General Shop Foreman*  
 Joseph Goodman, Samuel Kindred, Amado Maldonado, Thomas A. Reilly, Mario Rolla, Jr., Patrick Walsh, *Supervising Maintainers*  
 Cosmo Barbetto, Anthony Bigone, Abraham Brown, Alfred Casella, Francis Cushin, Cleve Ferguson, Robert Gonzalez, Alfred Hart, Rudolf Hensen, Gregory Kalmanowitz, Michael Merkin, Winston Newton, William M. Panzarino, Robert E. Reilly, Keith M. Reynolds, Michael Riggio, Renzo Scarazzini, Edward Scholler, Armando Serrano, Richard F. Settino, Marconi St. Hill, John A. Tiso, Jr., Nathaniel Torres, Clive Wright, *Maintainers*  
 Gregory Passalacqua, Felice Perrella, Jose Rivera, *Assistant Maintainers*

#### Maintenance

Raymond Kalmanowitz, *Superintendent*  
 Norman Janatsch, *Assistant Superintendent*  
 Arthur Hirt, Jr., James Smith, *Foreman*  
 Frank Suarino, *Supervising Attendant*  
 Richard Chen, Amedeo Missale, William Loughheed, *Maintainers*  
 Marlon Castro, Garrett Conaway, Wayne Harris, Ahmed Kadi, Pascual Luciano, William Ottman, Pedro Pagan, Juan Rivera, Michael Sbarbori, *Assistant Maintainers*  
 William Atkins, Manuel Garcia, Jr., George Izquierdo, Joseph Plaza, *Motor Vehicle Operators*  
 John Bruno, Jr., Migdalia Cordero, Zepheniah Campbell, Cornelia Carter, Joseph Cerardi, Pedro DeJesus, John Ferreira, Gwendolyn Hawkins, Theodore Olson, Vivian Palu, Felice Perrella, Richard Riordan, Marta Rivera, Efrain Rodriguez, Natividad Ruiz, Eduardo Vidal, Raymond Zelenka, *Attendants*

#### Cogeneration

Richard J. Luniewski, *Manager, Electrical Services*  
 Nigel Davy, *Supervisor*  
 Mark Anderson, Hervin A. Brown, Michael Henry, Edwin Otero, Herman Rosario, *Maintainers*

### Wildlife Management Services

Danny Wharton, *Curator*  
 George Amato, *Conservation Geneticist*  
 Steven Johnson, *Supervising Librarian, Archivist*  
 Nilda Ferrer, *Registrar*  
 Stephen Davis, *Records Assistant*  
 Helen Basic, *Animal Shipping Assistant*  
 Joanne Oliva-Purdy, *Keeper Training Assistant*  
 Mary Albert, *Office Aide*

## Exhibition and Graphic Arts

John A. Gwynne, *Deputy Director for Design*  
 Charles Beier, *Associate Director*  
 Lee Ehmke, *Manager of Exhibitions*  
 Pamela Thalhamer, *Administrative Assistant*

### Exhibition Design

Walter Deichmann, *Creative Director/Exhibits*  
 Susan Chin, *Senior Exhibit Designer*  
 Michael Dulin, *Exhibit Designer*

### Graphics Design

Sharon Kramer, *Creative Director/Graphics*  
 Ron Davis, Thomas Gamble, Gail Tarkan, *Graphic Designers*  
 Nancy Fischer, *Mechanical Artist*

### Graphics Production

Christopher Maune, *Supervisor*  
 Edward Kaszycki, Donald O'Leary, *Graphic Specialists*

### Exhibition Production

Gary Smith, *Supervisor*  
 Seth King, *Senior Exhibit Specialist*  
 Michael Delia, Karen Huebel, Jean Kolody, *Exhibit Specialists*

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 162 Washington Avenue, Albany,  
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 The Wildlife Conservation  
 Society, Office of the President,  
 Bronx, New York 10460.

## Recommended Form of Bequest

The Trustees of the Society recommend that for estate planning  
 purposes, members and friends consider the following language  
 for use in their wills:

"To NYZS The Wildlife Conservation Society, a not-for-  
 profit, tax-exempt membership organization incorporated  
 in the State of New York in 1895, having as its principal  
 address the International Wildlife Conservation Park,  
 Bronx, New York 10460, I hereby give and bequeath  
 \_\_\_\_\_ for the Society's general purposes."

In order to help the Society avoid future administration costs, it is  
 suggested that the following paragraph be added to any restrictions  
 that are imposed on a bequest:

"If at some future time, in the judgment of the Trustees  
 of NYZS The Wildlife Conservation Society, it is no  
 longer practical to use the income or principal of this  
 bequest for the purposes intended, the Trustees have the  
 right to use the income or principal for whatever pur-  
 poses they deem necessary and most closely in accord  
 with the intent described herein."

If you wish to discuss the language of your bequest with a member  
 of the Society's staff, please be in touch with the President's office  
 (212) 220-5115.

Howard Phipps, Jr., President







Wildlife

NYZS The WILDLIFE  
CONSERVATION SOCIETY

Bronx, New York 10460